

10040851.122801

**Customer Order Input**

File Edit View

General Related Info

Required fields are checked.

Customer Order ID: 11047

Customer: Eastern Connection ✓

Sales Person: King, Robert ✓

Order Date: 04/24/1998

Shipped Date: 05/01

Shipper: Federal

Freight: \$46.62

Shipping Address: Address

City: L

Region: 19 20 21 22 23 24 25

Postal: 26 27 28 29 30

Country:

April 1998

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Today None

OK Cancel

FIG. 1

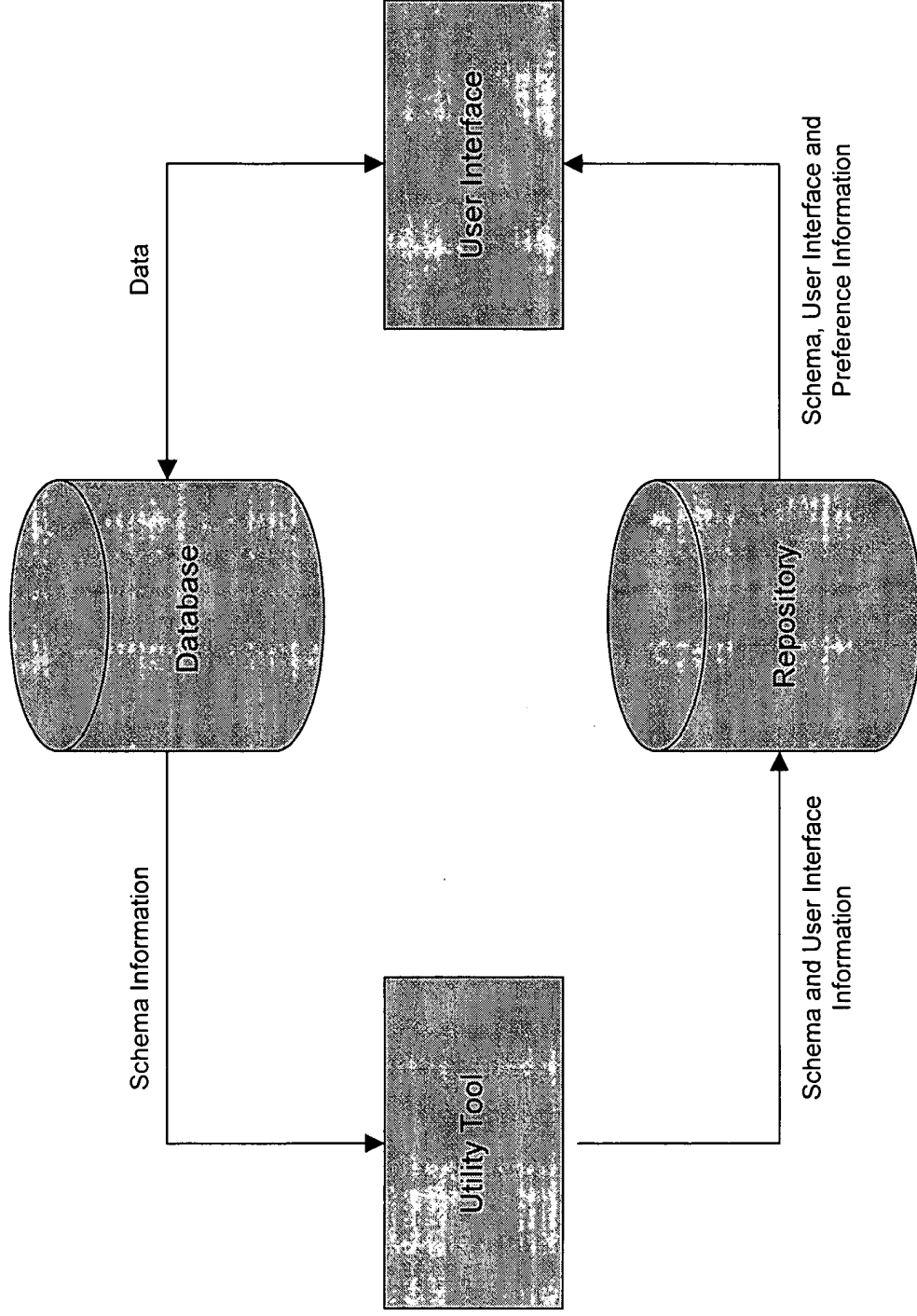


FIG. 2

# **Relational Database Normalization**

## **The First 4 Normal Forms**

### **1<sup>st</sup> Normal Form**

**Practical Rule:** Eliminate Repeating Groups: Make a separate table for each set of related attributes, and give each table a primary key.

**Formal Definition:** A relation is in first normal form (1NF) if and only if all underlying simple domains contain atomic values only.

### **2nd Normal Form**

**Practical Rule:** Eliminate Redundant Data: If an attribute depends on only part of a multi-valued key, remove it to a separate table.

**Formal Definition:** A relation is in second normal form (2NF) if and only if it is in 1NF and every non-key attribute is fully dependent on the primary key.

### **3rd Normal Form**

**Practical Rule:** Eliminate Fields Not Dependent On Key: If attributes do not contribute to a description of a key, remove them to a separate table.

**Formal Definition:** A relation is in third normal form (3NF) if and only if it is in 2NF and every non-key attribute is non-transitively dependent on the primary key.

### **4th Normal Form**

**Practical Rule:** Isolate Independent Multiple Relationships: No table may contain two or more one-to-many or many-to-many relationships that are not directly related.

**Formal Definition:** A relation R is in fourth normal form (4NF) if and only if, whenever there exists a multi-valued dependency in the R, say B depends on A, then all attributes of R are also functionally dependent on A.

FIG. 4

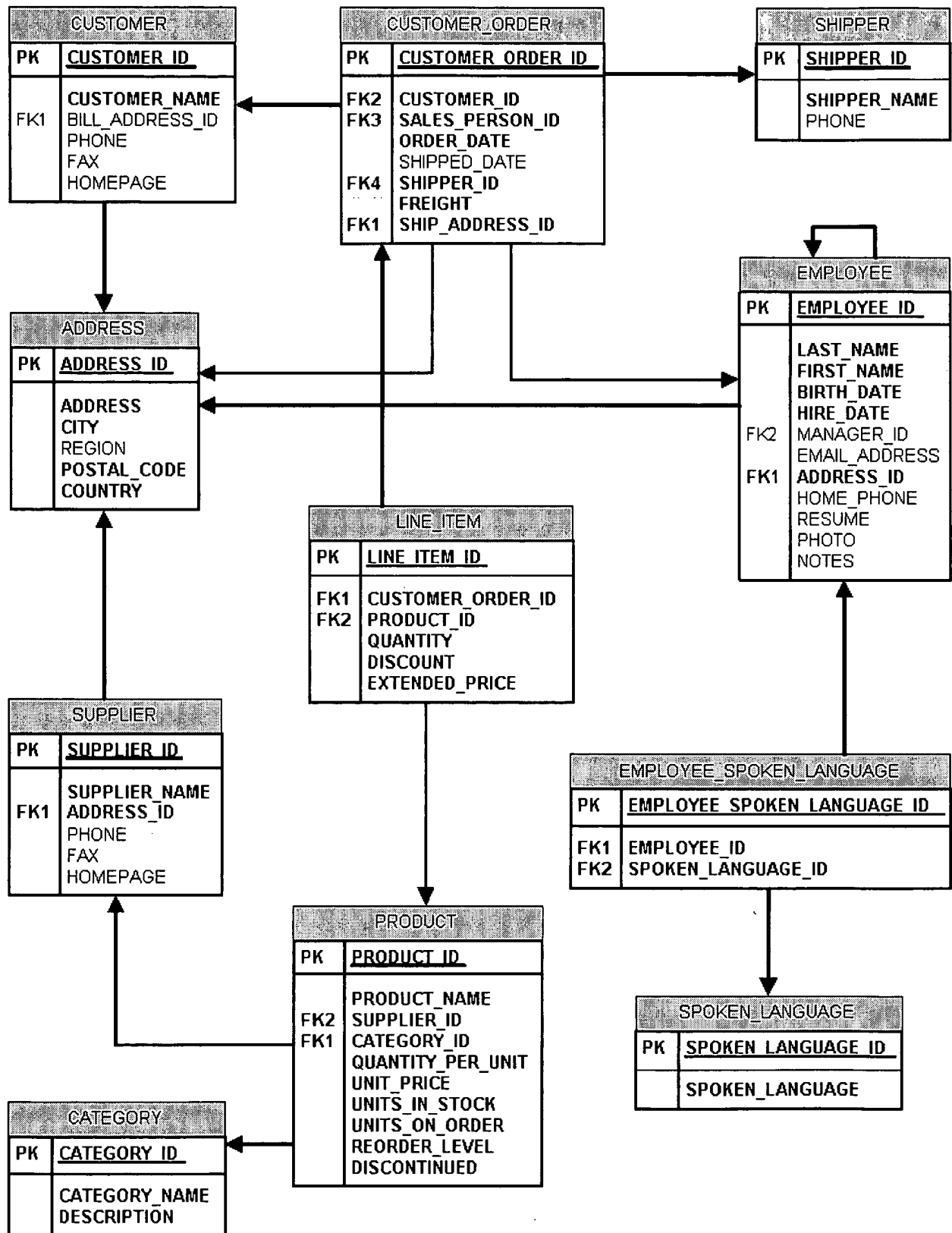


FIG. 4



10040351.122001

**Customer Orders**

File Tools Window Help

view **Customer Order**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*" in the search box.

Search:

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	
Bottom-Dollar Markets	Suyama, Michael	11/23/1998		United Package	\$70.58	

Record: 1 of 67

Line Item	CustomerName	OrderNumber	ProductName	UnitPrice	Quantity	Discount	ExtendedPrice
Customer	Alfreds Futterkiste	10643	Chartreuse verte	\$18.00	21	0.25	\$283.50
Sales Person	Alfreds Futterkiste	10643	Rössle Sauerkraut	\$45.60	15	0.25	\$513.00
	Alfreds Futterkiste	10643	Spegesild	\$12.00	2	0.25	\$18.00

Record: 1 of 3

Found: 67

FIG. 5

FOI b7E b7C b7D

**Customer Orders**

File Tools Window Help

view **Customer Order**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	0
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	Fa
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	Fa
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	Fa
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	24
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	24
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.58	24

Record: 1 of 67

Line Item  
Customer  
Sales Person

CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	BillCountry	PhoneNumber
Alfreds Futterkiste	Obere Str. 57	Berlin		12209	Germany	030-0074321

Record: 1 of 1

Found: 67

FIG. 6

**Customer Orders**

File Tools Window Help

View **Customer Order**

1. Customer  
2. Customer Order  
3. Employee  
4. Product

Reference Tables

mn with an eyeglass icon. To select all records, type the wildcard "\*".

	60 SalesPerson	60 OrderDate	60 ShippedDate	60 ShipperName	60 Freight	60
▶ Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	0
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	Fa
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	Fa
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	Fa
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	24
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	24
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.59	2

Record: 1 of 67

Line Item	CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	BillCountry	PhoneNumber
Customer	▶ Alfreds Futterkiste	Obere Str. 57	Berlin		12209	Germany	030-0074321
Sales Person							

Record: 1 of 1

Found: 67

FIG. 7

10040951-12301

Customer Orders

File Tools Window Help

View Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	0
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
B's Beverages	Suyama, Michael	7/15/1997	7/15/1997	Speedy Express	\$29.98	F
B's Beverages	Suyama, Michael	5/16/1997			\$12.36	F
Blauer See Delikatessen	Suyama, Michael	3/17/1998			\$44.65	F
Blondel père et fils	Suyama, Michael	1/12/1998			\$7.09	24
Blondel père et fils	Suyama, Michael	6/5/1997			\$8.05	24
Bottom-Dollar Markets	Suyama, Michael	1/23/1998			\$70.58	24

Record: 3 of 67

Line Item

Customer

Sales Person

CustomerName	BillAddress	BillCity	Bill
B's Beverages	Fauntleroy Circus	London	

Record: 1 of 1

Found: 67

- New Customer Order Record
- Duplicate Customer Order Record
- Edit Customer Order Record
- Delete Customer Order Record(s)
- View Customer Order Record
- Export Customer Order Record(s)
- Print Preview
- Print Report
- Find Customer Order (Advanced)
- Find Customer Order
- Display Data Entry Grid

PhoneNumber: (171) 555-1212

FIG. 8

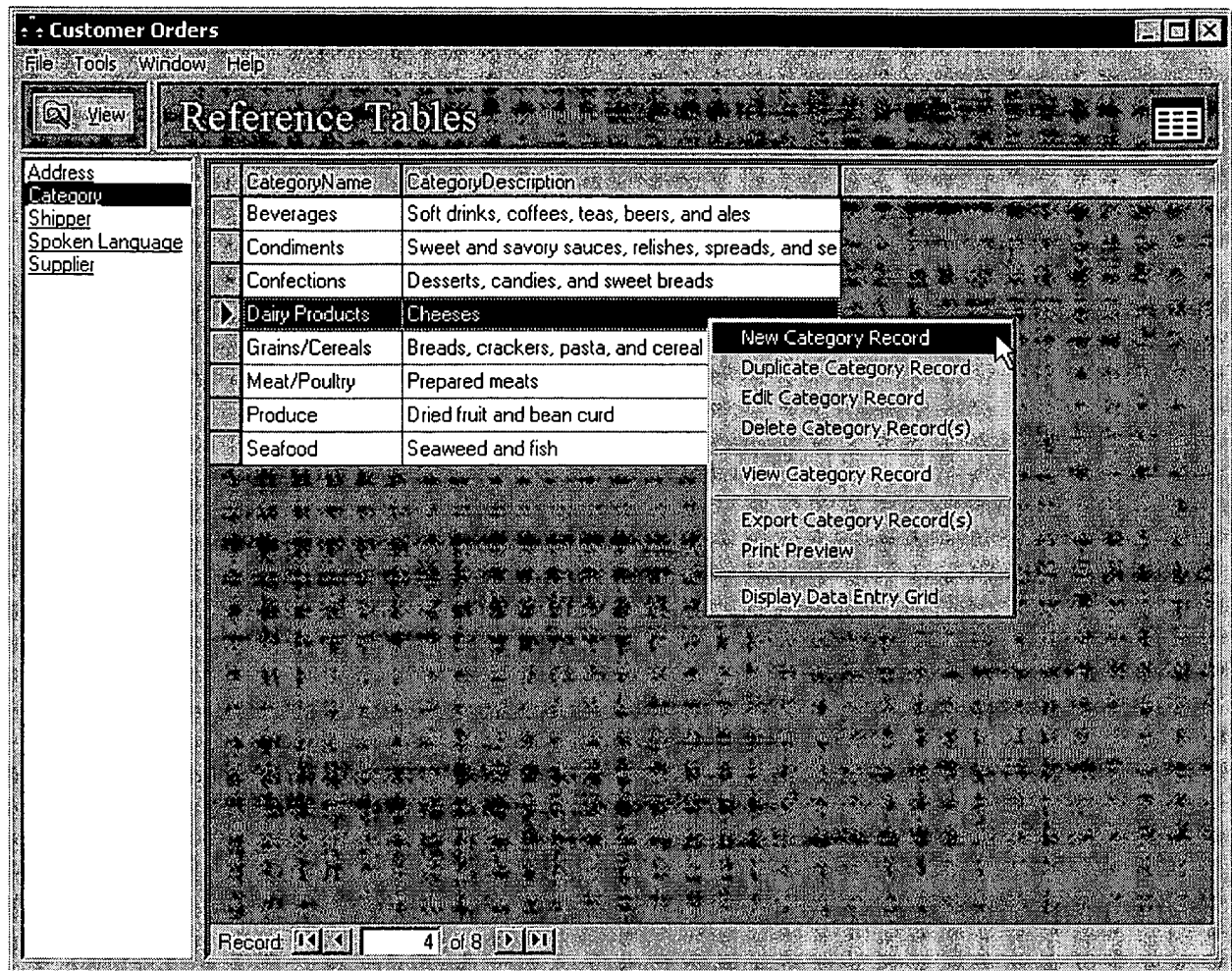


FIG. 9



Customer Orders

File Tools Window Help

view

Customer Order

1. Customer  
2. Customer Order  
3. Employee  
4. Product

Reference Tables

Column with an eyeglass icon. To select all records, type the wildcard "\*"

	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	0
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	F
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	F
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	F
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	2
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	2
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.58	2

Record: 3 of 67

Line Item	CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	BillCountry	PhoneNumber
Customer	B's Beverages	Fauntleroy Circus	London		EC2 5NT	UK	(171) 555-1212
Sales Person							

Record: 1 of 1

Found: 67

FIG. 10

Customer Orders

File Tools Window Help

View

Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard \*\*\*.

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.50

Line Item

Customer Sales Person

Record: 1 of 67

CustomerName	OrderNumber	ProductName	UnitPrice	Quantity	Discount	ExtendedPrice
Alfreds Futterkiste	10643	Chai	10.00	1	0.00	10.00
Alfreds Futterkiste	10643	Rose	10.00	1	0.00	10.00
Alfreds Futterkiste	10643	Spe	10.00	1	0.00	10.00

Found: 67

New Line Item Record

Duplicate Line Item Record

Edit Line Item Record

Delete Line Item Record(s)

Link the Selected Line Item Record(s) with a Different Customer Order Record

Unlink the Selected Line Item Record(s) from the Customer Order Record

View Line Item Record

Export Line Item Record(s)

Print Preview

Filter Line Item Records

Promote Line Item

Display Data Entry Grid

FIG. 11

Customer Orders

File Tools Window Help

Customer Order

You may search on any column with an eyeglass icon. To select all records type the wildcard \*

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.50

Record 1 of 67

Line Item  
Customer  
Sales Person

CustomerName: Alfreds Futterkiste  
BillAddress: Obere Str. 57  
BillCity: Berlin  
BillRegion: 12209  
BillCountry: Germany  
BillPostalCode: 12209  
Phone Number: 030-0074321

New Customer Record  
Duplicate Customer Record  
Edit Customer Record  
Delete Customer Record(s)

Link the Customer Order Record with a Different Customer Record  
Unlink the Customer Order Record from the Selected Customer Record

View Customer Record  
Export Customer Record(s)  
Print Preview  
Promote Customer  
Display Data Entry Grid

Found: 67

FIG. 12



Customer Orders

File Tools Window Help

View

Employee

You may search on any column with an eyeglass icon. To select all records, type the wildcard '\*'

German

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNumber
King, Robert	323-45-7765	5/31/1960	1/22/1994	Buchanan, Steven	(71) 555-5598
Peacock, Margaret	535-38-5109	9/19/1958	5/3/1993	Fuller, Andrew	(206) 555-8122

Record: 1 of 2

Customer Order

Spoken Language

English German

Record: 1 of 2

Found 2

New Spoken Language Record

Duplicate Spoken Language Record

Edit Spoken Language Record

Delete Spoken Language Record(s)

Link the Selected Employee with a Spoken Language Record(s)

Unlink the Employee Record from the Selected Spoken Language Record(s)

View Spoken Language Record

Export Spoken Language Record(s)

Print Preview

Promote Spoken Language

Display Data Entry Grid

FIG. 13

Customer Orders

File Tools Window Help

Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard \*

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46
▶ Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05
Bottom-Dollar Markets	Suyama, Michael	1/23/1999		United Package	\$70.59

Line Item

Customer

Sales Person

Record 2 of 67

CustomerName OrderNumber ProductName UnitPrice Quantity Discount ExtendedPrice

Around the Horn 10355 Guarani Fantastica \$4.50 25 0 \$30.00

Around the Horn

New Line Item Record

Duplicate Line Item Record

Edit Line Item Record

Delete Line Item Record(s)

Link the Selected Line Item Record(s) with a Different Customer Order Record

Unlink the Selected Line Item Record(s) from the Customer Order Record

View Line Item Record

Export Line Item Record(s)

Print Preview

Filter Line Item Records

Promote Line Item

Display Data Entry Grid

Record 1 of 2

Found: 67

FIG. 14

10040851.122801

**Line Item Input - [New Record]**

File Edit View

General Related Info

Required fields are checked.

Line Item ID:	New Record	
Customer Order:	CustomerName: Around the Horn	
	OrderDate: 11/15/1996	
	SalesPerson: Suyama, Michael	✓
	OrderNumber: 10355	
Product:	Boston Crab Meat	▼
Unit Price:	\$18.40	
Quantity:	5	✓
Discount:	0	✓
Extended Price:	\$92.00	

OK Cancel

FIG. 15

10040351-122301

**Customer Orders**

File Tools Window Help

View Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	Ol
▶ Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	Fe
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	Fe
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	Fe
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	24
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	24
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.58	24

Record: 2 of 67

Line Item	CustomerName	OrderNumber	ProductName	UnitPrice	Quantity	Discount	ExtendedPrice
Customer	▶ Around the Horn	10355	Boston Crab Meat	\$18.40	5	0	\$92.00
Sales Person	Around the Horn	10355	Guaraná Fantástica	\$4.50	25	0	\$90.00
	Around the Horn	10355	Ravioli Angelo	\$19.50	25	0	\$390.00

Record: 1 of 3

Found: 67

FIG. 16



Customer Orders

File Tools Window Help

View

Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard \*

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46
Around the Horn	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05
Bottom-Dollar Markets	Suyama, Michael	1/22/1998		United Package	\$70.59

Line Item

Customer

Sales Person

CustomerName

BillAddress

BillCity

BillRegion

BillPostalCode

BillCountry

Phone Number

Record

1 of 1

Found: 67

New Customer Record

Duplicate Customer Record

Edit Customer Record

Delete Customer Record(s)

Link the Customer Order Record with a Different Customer Record

Unlink the Customer Order Record from the Selected Customer Record

View Customer Record

Export Customer Record(s)

Print Preview

Promote Customer

Display Data Entry Grid

FIG. 17

10040851-122801

**Customer Input - [New Record]**

File Edit View

General 1 Customer Order

Required fields are checked.

Customer ID:	New Record	
Customer Name:	ACME Grocery	✓
Billing Address:	Address: 2810 Milton Dr.	
	City: Albuquerque	
	Region: NM	✓
	Postal Code: 87110	
	Country: USA	
Phone:	505-797-2807	
Fax:	505-797-2936	
Homepage:	www.acmegrocery.com	

OK Cancel

FIG. 18

**Customer Orders**

File Tools Window Help

**Customer Order**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

Search:

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	B
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	O
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	F
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	F
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	F
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	2
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	2
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.58	2

Record:  of 67

Line Item	CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	BillCountry	PhoneNumber
Customer	ACME Grocery	2810 Milton Dr.	Albuquerque	NM	87110	USA	505-797-2807
Sales Person							

Record:  of 1

Found: 67

FIG. 19

Customer Orders

File Tools Window Help

Employee

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNumber
Buchanan, Steven	485-12-3288	3/4/1955	10/17/1993	Fuller, Andrew	(71) 555-4848
Callahan, Laura	343-22-8765	1/9/1968	3/5/1994	Fuller, Andrew	(206) 555-1189
Davolio, Nancy	385-11-4562	12/8/1968	5/1/1992	Fuller, Andrew	(206) 555-9857
Dodsworth, Anne	535-78-5108	7/2/1969	11/15/1994	Buchanan, Steven	(71) 555-4444
Fuller, Andrew	555-76-2287	2/19/1952	8/14/1992		(206) 555-9482
King, Robert	323-45-7765	5/31/1960	1/2/1994	Buchanan, Steven	(71) 555-5598
Levelling, Janet	585-66-7754	8/30/1963	4/1/1992	Fuller, Andrew	(206) 555-3412
Resnick, Margaret	535-38-5109	9/19/1958	5/3/1993	Fuller, Andrew	(206) 555-9122

Record 3 of 9

Customer Order Spoken Language

Spoken Language English

Record 14 of 1

New Spoken Language Record  
Duplicate Spoken Language Record  
Edit Spoken Language Record  
Delete Spoken Language Record(s)  
Link the Selected Employee with a Spoken Language Record(s)  
Unlink the Employee Record from the Selected Spoken Language Record(s)  
View Spoken Language Record  
Export Spoken Language Record(s)  
Print Preview  
Promote Spoken Language  
Display Data Entry Grid

Found 9

FIG. 20



10040851-122801

Spoken Language Input - [New Record]

File Edit View

General Related Info

Required fields are checked.

Spoken Language ID: New Record

Spoken Language: Spanish

OK Cancel

FIG. 21

1004051-12301

**Customer Orders**

File Tools Window Help

View **Employee**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*" in the search box.

\*  
x

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNumber	
Buchanan, Steven	485-12-3288	3/4/1955	10/17/1993	Fuller, Andrew	(71) 555-4848	
Callahan, Laura	343-22-8765	1/9/1958	3/5/1994	Fuller, Andrew	(206) 555-1189	
Davolio, Nancy	385-11-4562	12/8/1958	5/1/1992	Fuller, Andrew	(206) 555-9857	
Dodsworth, Anne	535-78-5108	7/2/1969	11/15/1994	Buchanan, Steven	(71) 555-4444	
Fuller, Andrew	555-76-2287	2/19/1952	8/14/1992		(206) 555-9482	
King, Robert	323-45-7765	5/31/1960	1/2/1994	Buchanan, Steven	(71) 555-5598	
Leverling, Janet	585-66-7754	8/30/1963	4/1/1992	Fuller, Andrew	(206) 555-3412	
Peacock, Margaret	535-38-5109	9/19/1958	5/3/1993	Fuller, Andrew	(206) 555-8122	

Record: 3 of 9

**Customer Order**

Spoken Language:

SpokenLanguage
English
Spanish

Record: 2 of 2

Found: 9

FIG. 22

Customer Orders

File Tools Window Help

Customer Order

View

You may search on any column with an eyeglass icon. To select all records, type the wildcard ""

Suy

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight
ACME Grocery	Suyama, Michael	11/20/1996	11/20/1996	Speedy Express	\$41.95
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05
Bottom-Dollar Markets	Suyama, Michael	1/22/1998		United Package	\$70.58

Record 2 of 67

CustomerName

BillAddress

BillCity

BillRegion

BillPostalCode

BillCountry

PhoneNumber

Alfreds Futterkiste

Obere Str. 57

Berlin

12209

Germany

030-0074321

Line Item

Customer

Sales Person

Record 1 of 1

Found 67

New Customer Record

Duplicate Customer Record

Edit Customer Record

Delete Customer Record(s)

Link the Customer Order Record with a Different Customer Record

Unlink the Customer Order Record from the Selected Customer Record

View Customer Record

Export Customer Record(s)

Print Preview

Promote Customer

Display Data Entry Grid

FIG. 23

10040851-122801

**Customer**

File

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	
Alfreds Futterkiste	Bere Str. 57	Berlin		12209	Ger

Record: 1 of 1

Customer Order

CustomerName	SalesPerson	OrderDate	ShippedDate	Shipper
Alfreds Futterkiste	Leverling, Janet	4/9/1998	4/13/1998	Speedy
Alfreds Futterkiste	Davolio, Nancy	3/16/1998	3/24/1998	Speedy
Alfreds Futterkiste	Davolio, Nancy	1/15/1998	1/21/1998	Federal
Alfreds Futterkiste	Peacock, Margaret	10/13/1997	10/21/1997	Speedy
Alfreds Futterkiste	Peacock, Margaret	10/2/1997	10/12/1997	United F

Record: 1 of 6

Found: 1

FIG. 24

**Customer Orders**

File Tools Window Help

View **Customer Order**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*" in the search box.

Suyama

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	
▶ ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Br
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	Ol
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	Fa
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	Fa
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	Fa
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	24
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	24
Bottom-Dollar Markets	Suyama, Michael	4/23/1998		United Package	\$70.58	24

Record: 1 of 67

Line Item	CustomerName	BillAddress	BillCity	BillRegion	BillPostalCode	BillCountry	PhoneNumber
Customer	▶ ACME Grocery	2810 Milton Dr	Albuquerque	NM	87110	USA	505-797-2807
Sales Person							

Record: 1 of 1

Found: 67

FIG. 25



10040351-122301

**Customer Orders**

File Tools Window Help

**Customer Order**

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

Suyama

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	ShipAddress
ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Brook Farm Str
Alfreds Futterkiste	Suyama, Michael	8/25/1997	9/2/1997	Speedy Express	\$29.46	Oberstr. 57
B's Beverages	Suyama, Michael	7/15/1997	7/21/1997	Federal Shipping	\$29.98	Fauntleroy Circus
B's Beverages	Suyama, Michael	5/16/1997	5/23/1997	Federal Shipping	\$12.36	Fauntleroy Circus
Blauer See Delikatessen	Suyama, Michael	3/17/1998	3/20/1998	United Package	\$44.65	Forsterstr. 57
Blondel père et fils	Suyama, Michael	1/12/1998	2/6/1998	Speedy Express	\$7.09	24, place Kléber
Blondel père et fils	Suyama, Michael	6/5/1997	6/13/1997	Speedy Express	\$8.05	24, place Kléber
Bottom-Dollar Markets	Suyama, Michael	1/23/1998		United Package	\$70.58	23, rue de la

Record: 1 of 67

Line Item	CustomerName	OrderNumber	ProductName	UnitPrice	Quantity	Discount	ExtendedPrice
Customer	ACME Grocery	10355	Boston Crab Meat	\$18.40	5	0	\$92.00
Sales Person	ACME Grocery	10355	Guaraná Fantástica	\$4.50	25	0	\$90.00
	ACME Grocery	10355	Ravioli Angelo	\$19.50	25	0	\$390.00

Record: 1 of 3

Found: 67

FIG. 26

**Customer Orders**

File Tools Window Help

View Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard '\*'

Chai

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	ShipAddress
Alfreds Futterkiste	Leverling, Janet	4/9/1998	4/13/1998	Speedy Express	\$1.21	Öbere Str. 57
Berglunds snabbköp	Davolio, Nancy	10/1/1997	10/7/1997	United Package	\$13.42	Berguvsvägen 8
Blondel père et fils	Peacock, Margaret	8/12/1997	8/20/1997	Federal Shipping	\$30.36	24, place Kléber
Bottom-Dollar Markets	Leverling, Janet	3/2/1998	3/11/1998	Federal Shipping	\$48.83	23 Tsawassen Blvd.
Cactus Comidas para llevar	Callahan, Laura	4/29/1997	5/2/1997	United Package	\$17.22	Cerrito 333
Chop-suey Chinese	Suyama, Michael	12/3/1996	12/27/1996	United Package	\$1.17	Hauptstr. 31
Die Wandernde Kuh	Peacock, Margaret	11/7/1996	11/15/1996	United Package	\$0.78	Adenauerallee 900
Du monde entier	King, Robert	7/24/1997	7/30/1997	United Package	\$1.85	67, rue des Cinquante

Record 1 of 41

Line Item	CustomerName	OrderNumber	Product Name	UnitPrice	Quantity	Discount	ExtendedPrice
Customer	Alfreds Futterkiste	11011	Chai	\$18.00	10	0	\$180
Sales Person	Alfreds Futterkiste	11011	Escargots de Bourgogne	\$13.25	40	0.05	\$50
	Alfreds Futterkiste	11011	Flotemysost	\$21.50	20	0	\$430

Record 1 of 3

Found: 41

FIG. 27

10040851.122801

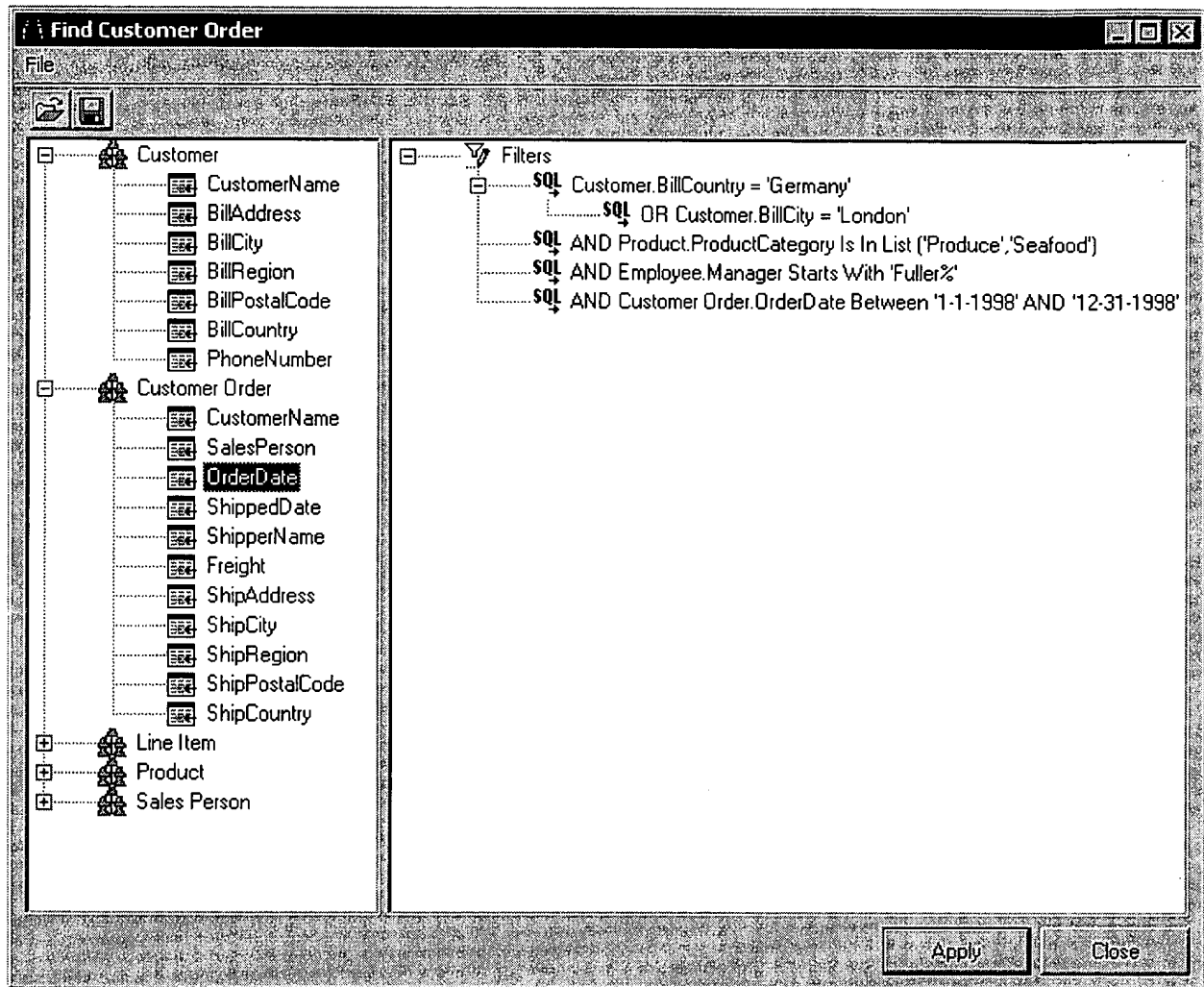


FIG. 28



10040851-122801

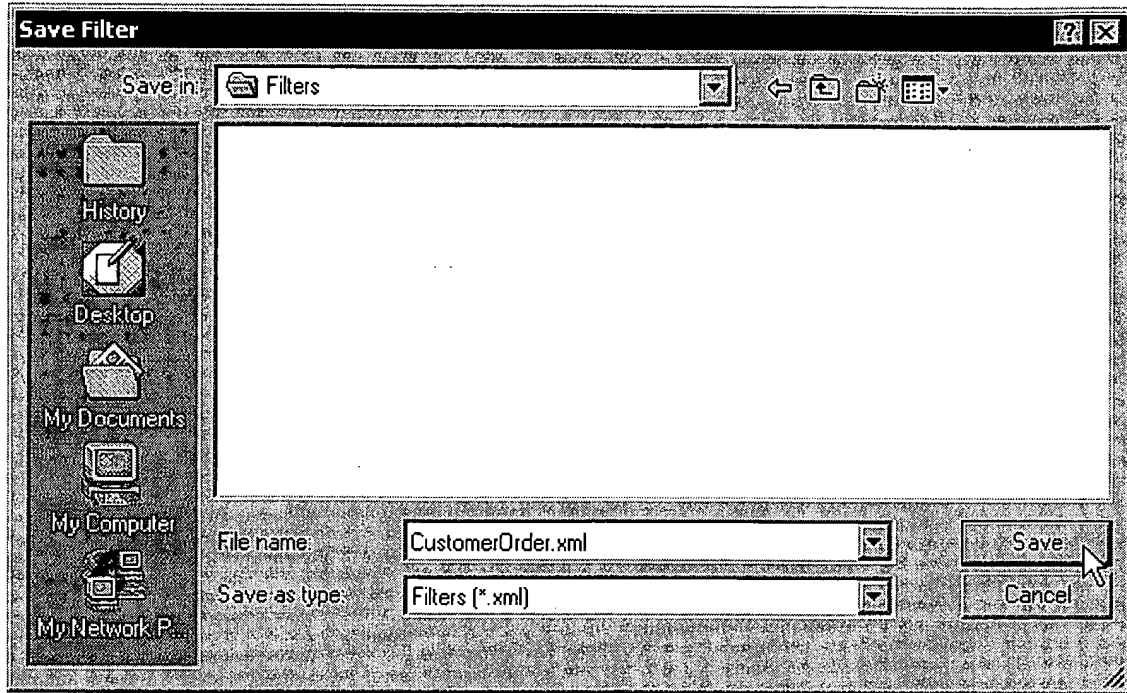


FIG. 29

10040851-12801

Customer Orders

File Tools Window Help

View Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

ACME

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	ShipAddress
ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Brook Farm II Stratford St. Mary C

Record: 1 of 1

Line Item

Customer  
Sales Person

CustomerName	OrderNumber	Product Name	Unit Price	Quantity	Discount	Extended Price
ACME Grocery	10355	Boston Crab Meat	\$18.40	5	0	\$92.00
ACME Grocery	10355	Guaraná Fantástica	\$4.50	25	0	\$90.00
ACME Grocery	10355	Ravioli Angelo	\$19.50	25	0	\$390.00

Record: 3 of 3

Found: 1

Line Item

Delete the selected record(s)?

Yes No

FIG. 30

**Customer Order Input**

File Edit View

General Related Info

Required fields are checked.

Customer Order ID:	10355	
Customer:	ACME Grocery	✓
Sales Person:	Suyama, Michael	✓
Order Date:	11/15/1996	✓
Shipped Date:	11/20/1996	▼
Shipper:	Speedy Express	✓
Freight:	\$41.95	✓
Shipping Address:	Address: Brook Farm Stratford St. Mary City: Colchester Region: Essex PostalCode: C07 6JX	✓

OK

Cancel

FIG. 31

## Data Entry Control Decision Flowchart

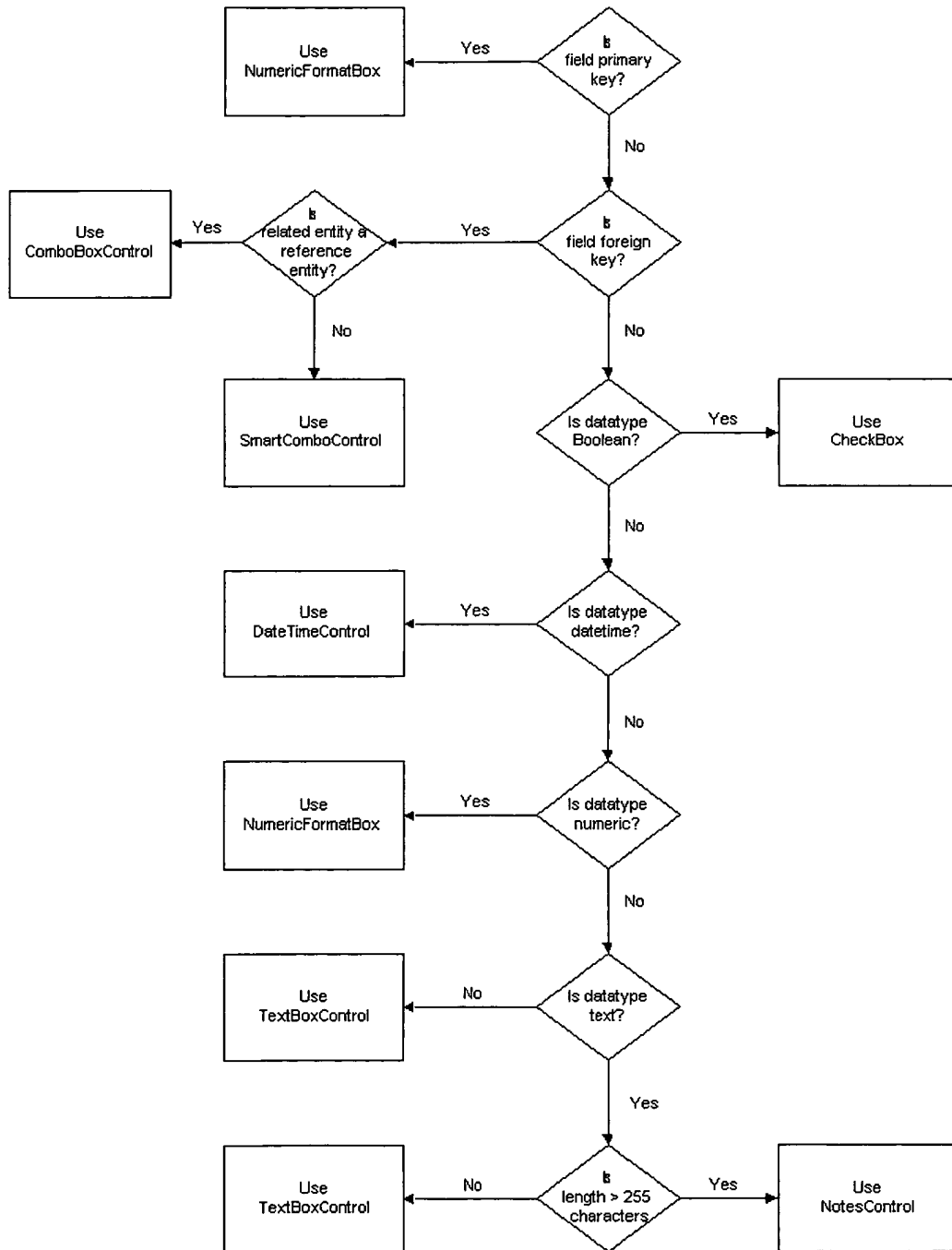


FIG. 32

10040351-12801

**Customer Order Input**

File Edit View

General Related Info

Required fields are checked

Customer Order ID:	10355	
Customer:	ACME Grocery	✓
Sales Person:	Suyama, Michael	✓
Order Date:	11/15/1996	✓
Shipped Date:	11/20/1996	
Shipper:	Speedy Express	
Freight:	Federal Shipping	✓
Shipping Address:	Speedy Express	
	United Package	
	City: Colchester	✓
	Region: Essex	
	PostalCode: C07 6JX	

OK

Cancel

FIG. 33

10040851 122801

Line Item Input - Order Number: 10355

File Edit View

General Related Info

Required fields are checked

Line Item ID:	2185
Customer Order:	CustomerName: ACME Grocery OrderDate: 11/15/1996 SalesPerson: Suyama, Michael OrderNumber: 10355
Product:	Boston Crab Meat ✓
Unit Price:	\$18.40
Quantity:	5 ✓
Discount:	0 ✓
Extended Price:	\$92.00

OK

Cancel

FIG. 34

Customer Orders

File Tools Window Help

View

Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

ACME

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	ShipAddress	S
ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996	Speedy Express	\$41.95	Brook Farm	Stratford St. Mary C

Record: 1 of 1

Line Item

Customer

Sales Person

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNumber
Suyama, Michael	585-35-1292	7/2/1963	10/17/1993	Buchanan, Steven	(71) 555-7773

Record: 1 of 1

Found: 1

FIG. 35



Customer Orders

File Tools Window Help

view

Employee

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*"

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNumber
King, Robert	323-45-7765	5/31/1960	1/2/1994	Buchanan, Steven	(71) 555-5598
Peacock, Margaret	535-38-5109	9/19/1958	5/3/1993	Fuller, Andrew	(206) 555-8122

Record: 1 of 2

Customer Order

SpokenLanguage

SpokenLanguage

English

German

Record: 1 of 2

Found: 2

FIG. 36



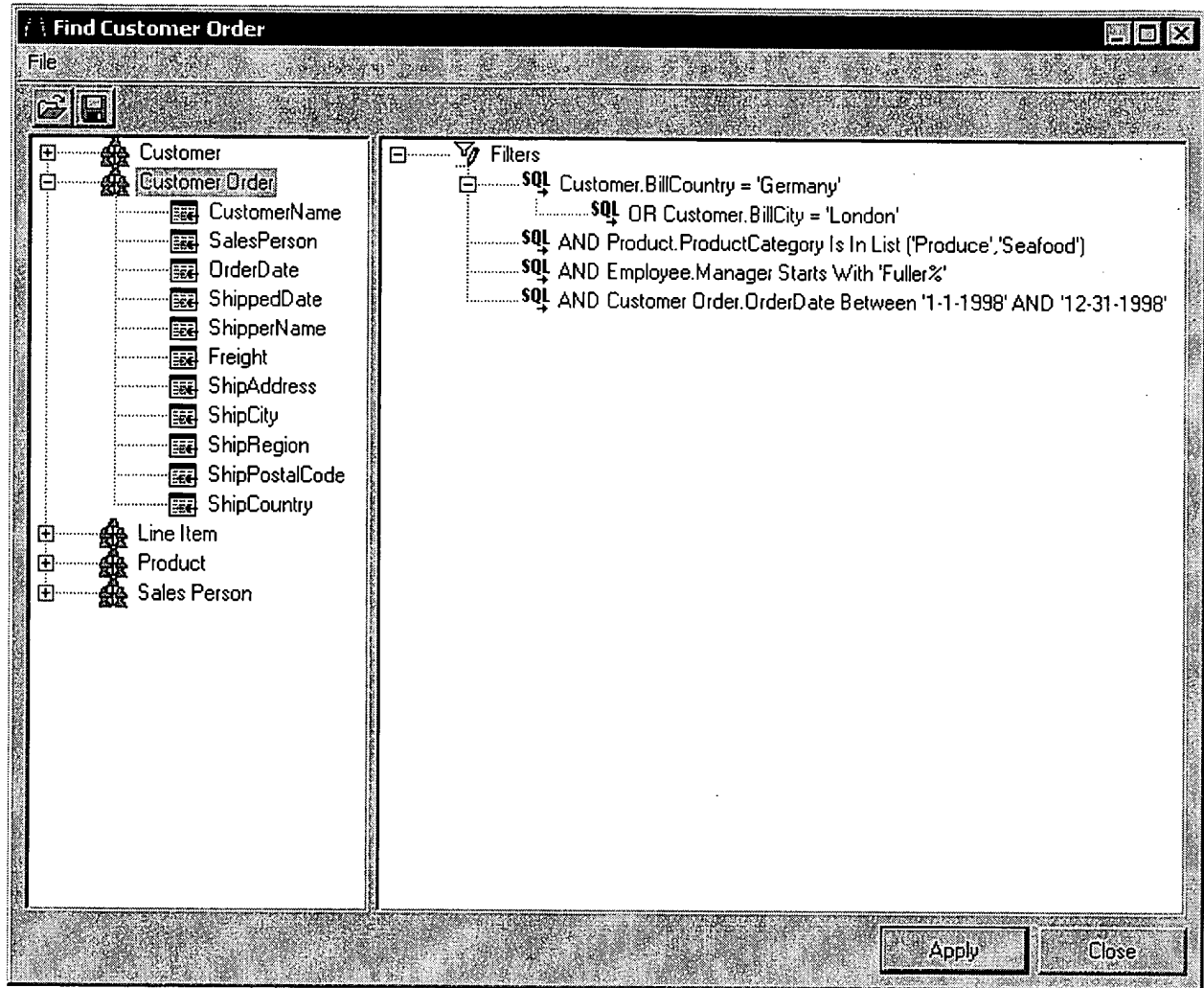


FIG. 37

10040351-12801  
F0822T-T580400T

**Filter: Text** [X]

Field:

Operator:

Value 1:

Value 2:

In List:

- ☐ Beverages
- ☐ Condiments
- ☐ Confections
- ☐ Dairy Products
- ☐ Grains/Cereals
- ☐ Meat/Poultry
- ☒ Produce
- ☒ Seafood

[OK] [Cancel]

[Select All] [Deselect All]

FIG. 38

10040851 " 122801

Line Item Input - [New Record]

File Edit View

General Related Info

Required fields are checked.

Line Item ID:	New Record	
Customer Order:	CustomerName: ACME Grocery	
	OrderDate: 11/15/1996	
	SalesPerson: Suyama, Michael	✓
	OrderNumber: 10355	
Product:	Aniseed Syrup	✓
Unit Price:	10	
Quantity:	10	✓
Discount:	0.1	✓
Extended Price:	\$90.00	

OK

Cancel

FIG. 39

10040851-122801













Line Item Input						  		
	Product / A		Quantity		Discount		Extended Price	
	Boston Crab Meal		5	✓	0	✓	\$92.00	
	Guaraná Fantástica	✓	25	✓	0	✓	\$90.00	
	Ravioli Angelo	✓	25	✓	0	✓	\$390.00	
*		✓		✓		✓		
Record (Filtered)   1 of 3   								

FIG. 40

10040351-122801

Line Item Input - Order Number: 10355

File Edit View

General Related Info

Required fields are checked:

Line Item ID:	2185	
Customer Order:	CustomerName: ACME Grocery	
	OrderDate: 11/15/1996	
	SalesPerson: Suyama, Michael	✓
	OrderNumber: 10355	
Product:	Boston Crab Meat	✓
Unit Price:	\$18.40	
Quantity:	5	✓
Discount:	0	✓
Extended Price:	\$92.00	

OK

Cancel

FIG. 41



10040351-122801

**Product Input**

File Edit View

General Related Info

Required fields are checked

Product ID:	40	
Product Name:	Boston Crab Meat	✓
Supplier:	New England Seafood Cannery	✓
Category:	Seafood	✓
Quantity Per Unit:	24 - 4 oz tins	✓
Unit Price:	\$18.40	✓
Units In Stock:	123	✓
Units On Order:	0	✓
Reorder Level:	30	✓
Discontinued:	<input checked="" type="checkbox"/>	

OK Cancel

FIG. 42

10040851-122801

**Customer Order Input - [New Record]**

File Edit View

General Related Info

Required fields are checked

Customer Order ID:	New Record	
Customer:	ACME Grocery	✓
Sales Person:	Suyama, Michael	✓
Order Date:	12/15/2001	✓
Shipped Date:		
Shipper:		<input type="checkbox"/> <input checked="" type="checkbox"/>
Freight:	\$0.00	✓
Shipping Address:		✓

OK Cancel

FIG. 43

10040851-123801

**Shipper Input - [New Record]**

File Edit View

General

Required fields are checked:

Shipper ID:	New Record
Shipper Name:	National Transport ✓
Phone:	312-777-3244

OK Cancel

FIG. 44

10040351-122301

**Customer Order Input - [New Record]**

File Edit View

General Related Info

Required fields are checked.

Customer Order ID	New Record	
Customer:	ACME Grocery	✓
Sales Person:	Suyama, Michael	✓
Order Date:	12/15/2001	✓
Shipped Date:		
Shipper:	National Transport	<input checked="" type="checkbox"/>
Freight:	\$0.00	✓
Shipping Address:		✓

OK

Cancel

FIG. 45

10040854.122801

**Employee Input**

File Edit View

General Related Info

Required fields are checked.

Employee ID:	2	
Last Name:	Fuller	✓
First Name:	Andrew	✓
SSN:	555-76-2287	✓
Birth Date:	02/19/1952	✓
Hire Date:	08/14/1992	✓
Manager:		
Email Address:		
Address:	Address: 908 W. Capital Way	
	City: Tacoma	
	Region: WA	✓
	Postal Code: 98401	
	Country: USA	
Home Phone:	(206) 555-9482	
Resume:		
Photo:	[Image]	
Notes:	Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then	

OK

Cancel

FIG. 46



10040851-122801

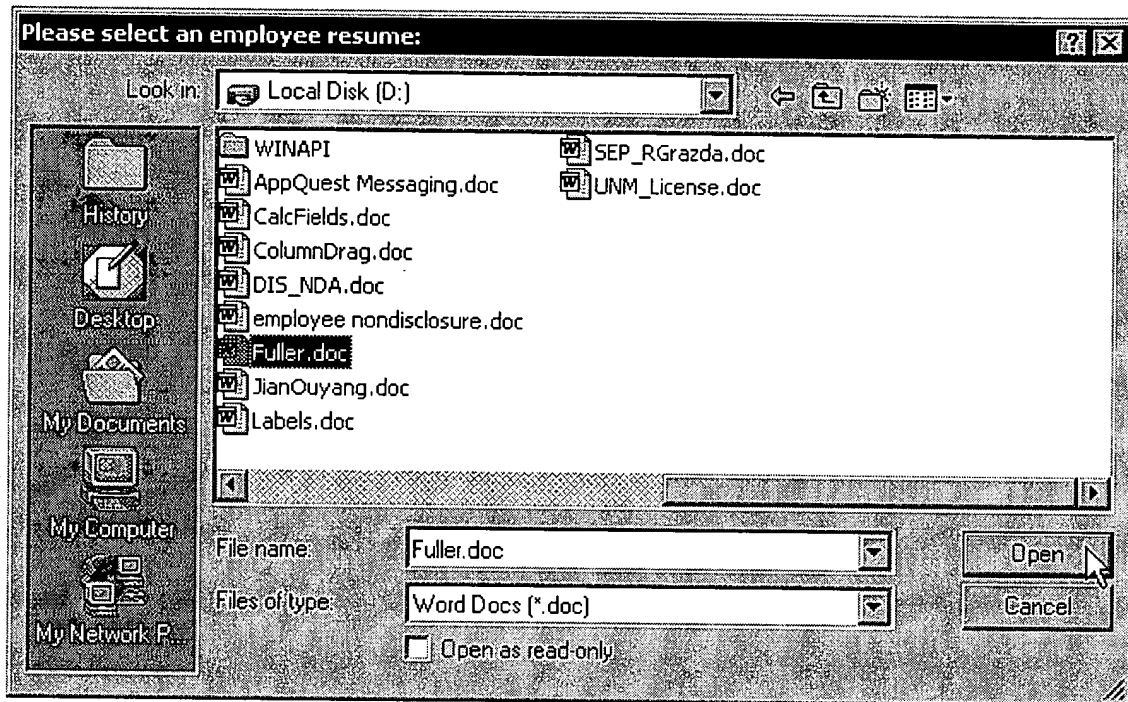


FIG. 47

10040651 12300  
T0922T T580400T

**Employee Input**

File Edit View

General Related Info

Required fields are checked

Employee ID:	2	
Last Name:	Fuller	✓
First Name:	Andrew	✓
SSN:	555-76-2287	✓
Birth Date:	02/19/1952	✓
Hire Date:	08/14/1992	✓
Manager:		
Email Address:		
Address:	Address: 908 W. Capital Way	
	City: Tacoma	
	Region: WA	✓
	Postal Code: 98401	
	Country: USA	
Home Phone:	(206) 555-9482	
Resume:	D:\Fuller.doc	
Photo:	[Image]	
Notes:	Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then	

OK Cancel

FIG. 48

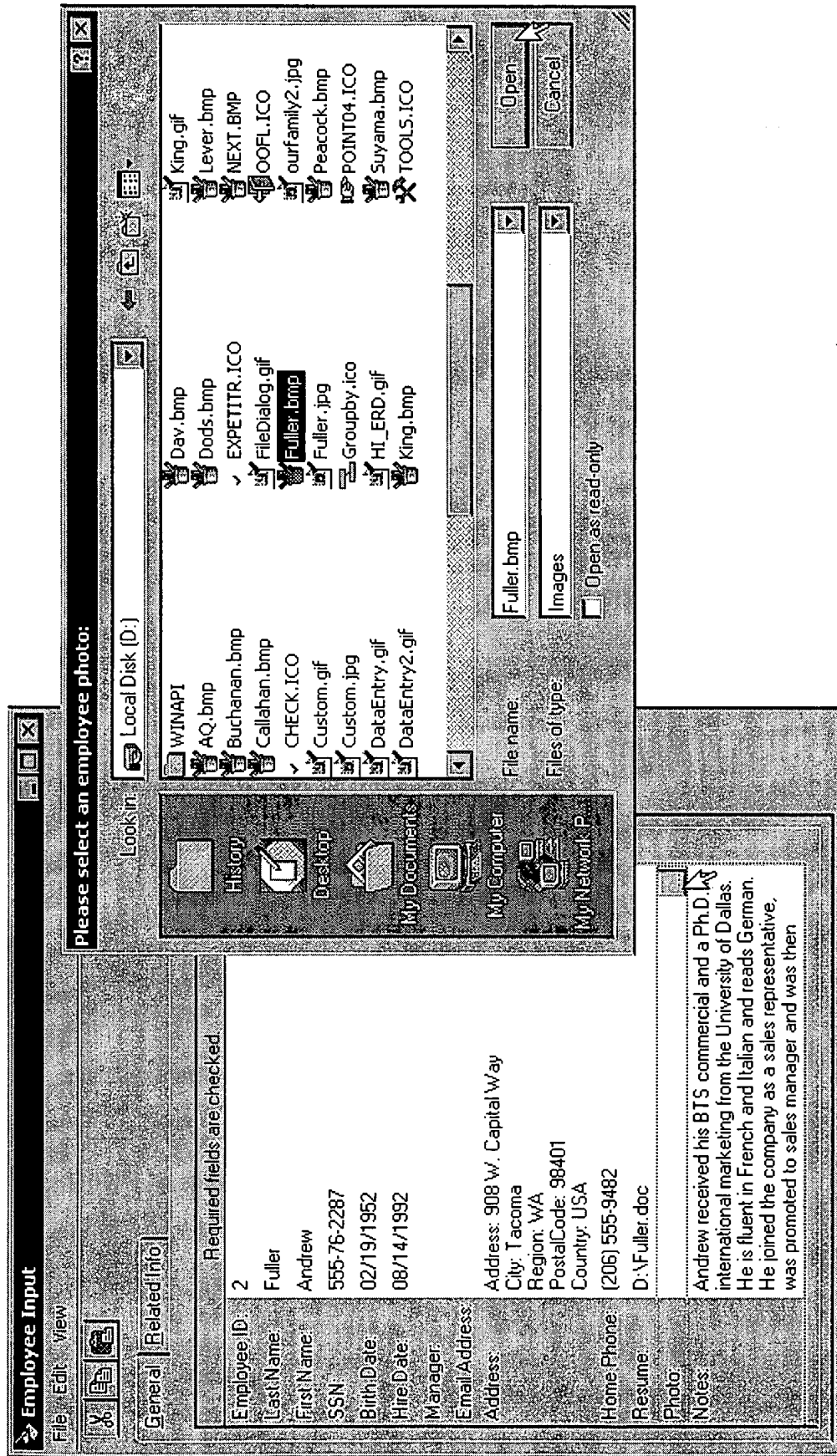


FIG. 49

Employee Input

File Edit View

General

Related Info

Required fields are checked.

Employee ID: 2

Last Name: Fuller

First Name: Andrew

SSN: 555-76-2287

Birth Date: 02/19/1952

Hire Date: 08/14/1992

Manager:

Email Address:

Address: 908 W. Capital Way

City: Tacoma

Region: WA

Postal Code: 98401

Country: USA

Home Phone: (206) 555-9482

Resume: D:\Fuller.doc

Photo: (Image)

Notes: Andrew received his BTS commercial and international marketing from the University. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then

OK

Cancel

Image

FIG. 50

10040851-122801

**Employee Input**

File Edit View

General Related Info

Required fields are checked.

Employee ID:	2
Last Name:	Fuller ✓
First Name:	Andrew ✓
SSN:	555-76-228
Birth Date:	
Hire Date:	
Manager:	
Email:	
Address:	
Postal Code:	98401
Country:	USA
Home Phone:	(206) 555-9482
Resume:	
Photo:	(Image)
Notes:	Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then

Customer Orders

"555-76-228" is an invalid social security number.

OK

OK Cancel

FIG. 51



Employee Input

File Edit View

General Related Info

Required fields are checked:

Employee ID: 2

Last Name: Fuller

First Name: Andrew

SSN: 555-76-2287

Birth Date: 02/19/1952

Hire Date: 08/14/1992

Manager:

Email/Address:

Address: 908 W. Capital Way

City: Tacoma

Region: WA

Postal Code: 98401

Country: USA

Home Phone: (206) 555-9482

Resume:

Photo:

Notes:

OK

Cancel

Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then named vice president of sales. Andrew is a member of the Sales Management Roundtable, the Seattle Chamber of Commerce, and the Pacific Rim Importers Association.

FIG. 52

10040851-122801

**Product Input**

File Edit View

General Related Info

Required fields are checked

Product ID:	3	
Product Name:	Aniseed Syrup	✓
Supplier:	Exotic Liquids	✓
Category:	Condiments	✓
Quantity Per Unit:	12 - 550 ml bottles	✓
Unit Price:	\$10.00	
Units In Stock:	13	✓
Units On Order:	70	✓
Reorder Level:	25	✓
Discontinued:	<input type="checkbox"/>	

OK

Cancel

FIG. 53

Employee Input

File Edit View

General

Related Info

Required fields are checked.

Employee ID: 2

Last Name: Fuller

First Name: Andrew

SSN: 555-76-2287

Birth Date: 02/19/1952

Hire Date: 08/14/1992

Manager:

Email Address: afuller@acmewholesale.com

Address: 908 Capital Way

City: Tacoma

Region: WA

Postal Code: 98401

Country: USA

Home Phone: (206) 555-9482

Resume: D:\Fuller.doc

Photo: (Image)

Notes: Andrew received his BTS commercial and a Ph.D. in international marketing from the University of Dallas. He is fluent in French and Italian and reads German. He joined the company as a sales representative, was promoted to sales manager and was then

New Message

File Edit View Insert Format Tools Message Help

Send

Cut Copy Paste Undo Check Spelling Attach Priority

From: john@dynamicinfosolutions.com (mail.dynamicinfosolutions.com)

To: afuller@acmewholesale.com

Cc:

Subject:

FIG. 54

10040851-122801

☒ Business Rule Properties - Line Item - Rule #1

Rule Number:

Update Type: ☐ Delete  
☒ Insert  
☐ Update

Rule Type: ☒ SQL ☐ Stored Procedure ☐ Terminator

Rule: 

```
SELECT * FROM PRODUCT
WHERE (UNITS_IN_STOCK - {QUANTITY}) <= 0
AND PRODUCT_ID = {PRODUCT_ID}
```

Action Type: ☐ Fatal ☒ Warning ☐ Go To Rule ☐ Stop

Message: 

```
There is insufficient inventory on hand to fill this order. Do you
wish to save the line item anyway?
```

OK Cancel

FIG. 55

10040851 122801

**Trigger Properties - Line Item - Trigger #1**

Trigger Number: 1

Update Type:

- ☐ Delete
- ☒ Insert
- ☐ Update

Trigger Type:

- ☒ SQL
- ☐ Stored Procedure

Trigger:

```
UPDATE PRODUCT
SET UNITS_IN_STOCK = UNITS_IN_STOCK - {QUANTITY}
WHERE PRODUCT_ID = {PRODUCT_ID}
```

OK Cancel

FIG. 56



10040851.122801

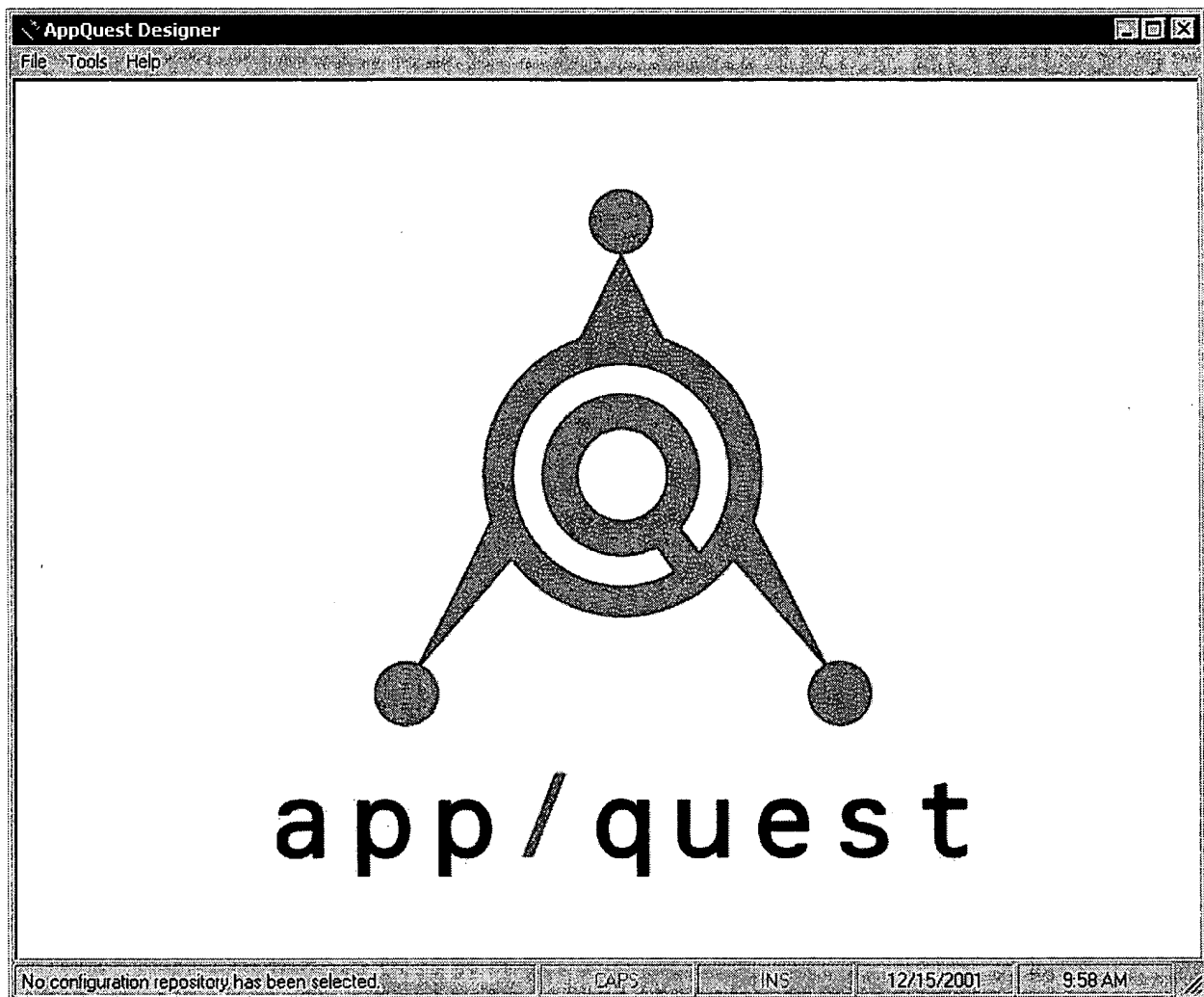
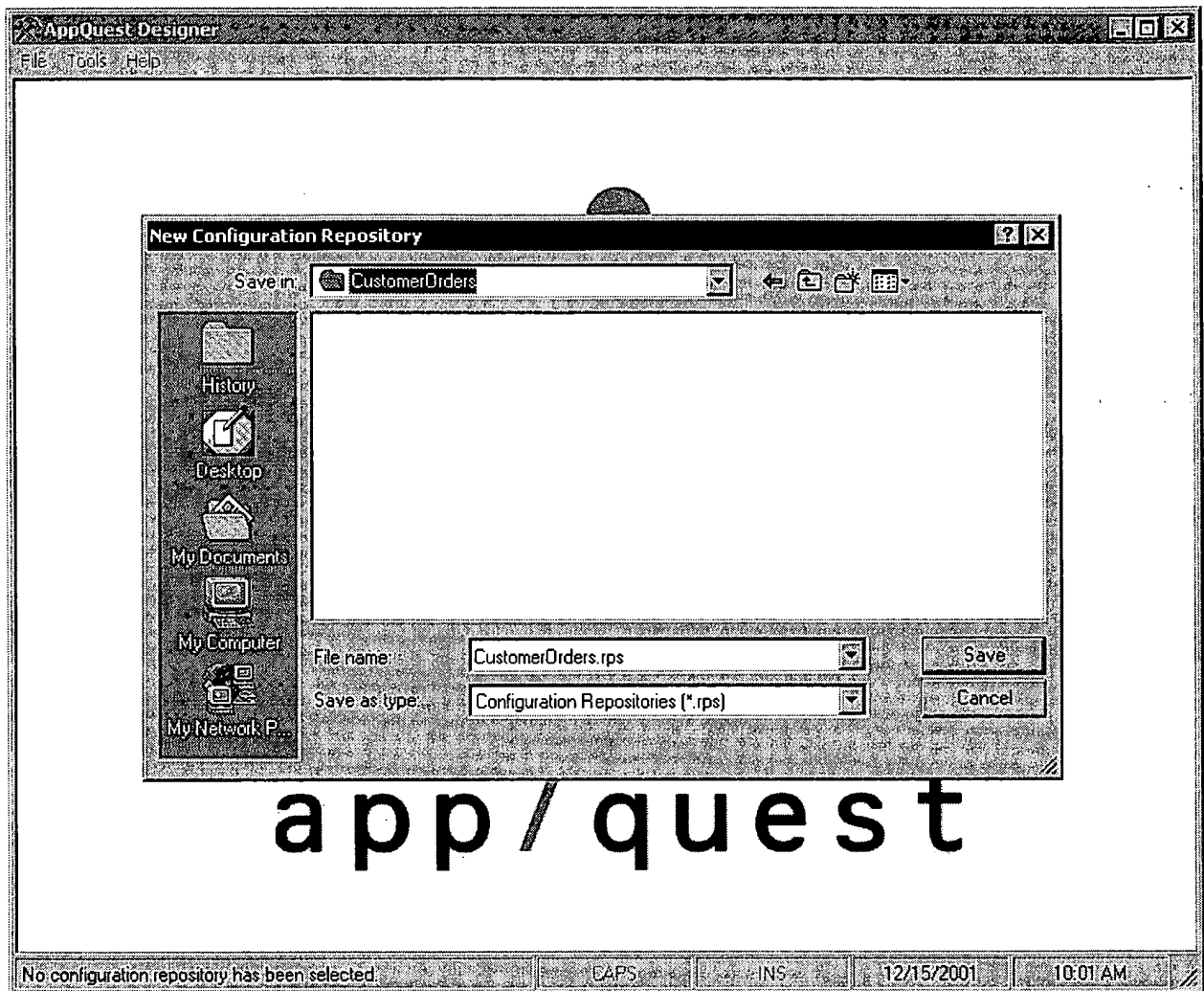


FIG. 57

TEST-10040851-122801



app / quest

FIG. 58

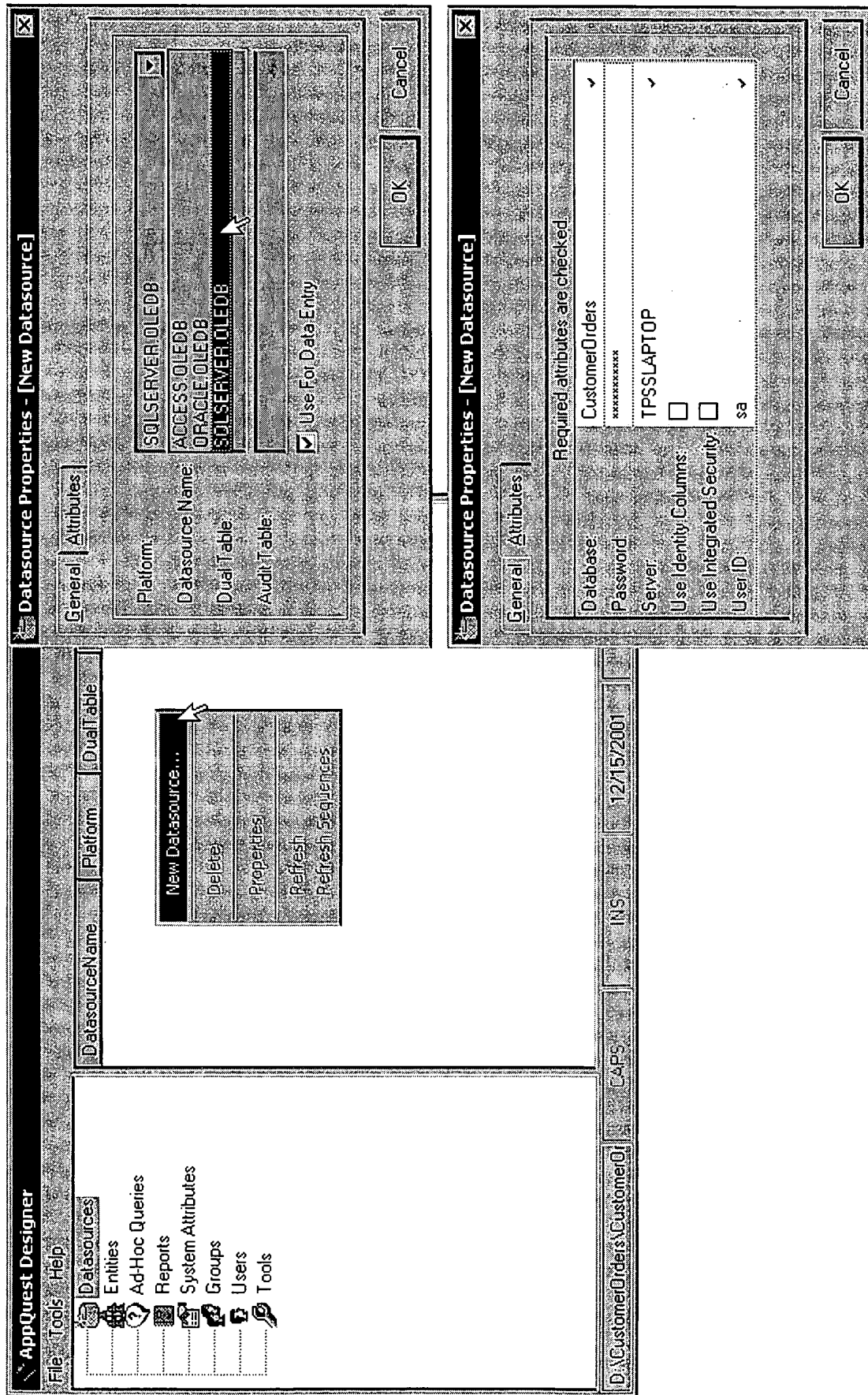


FIG. 59

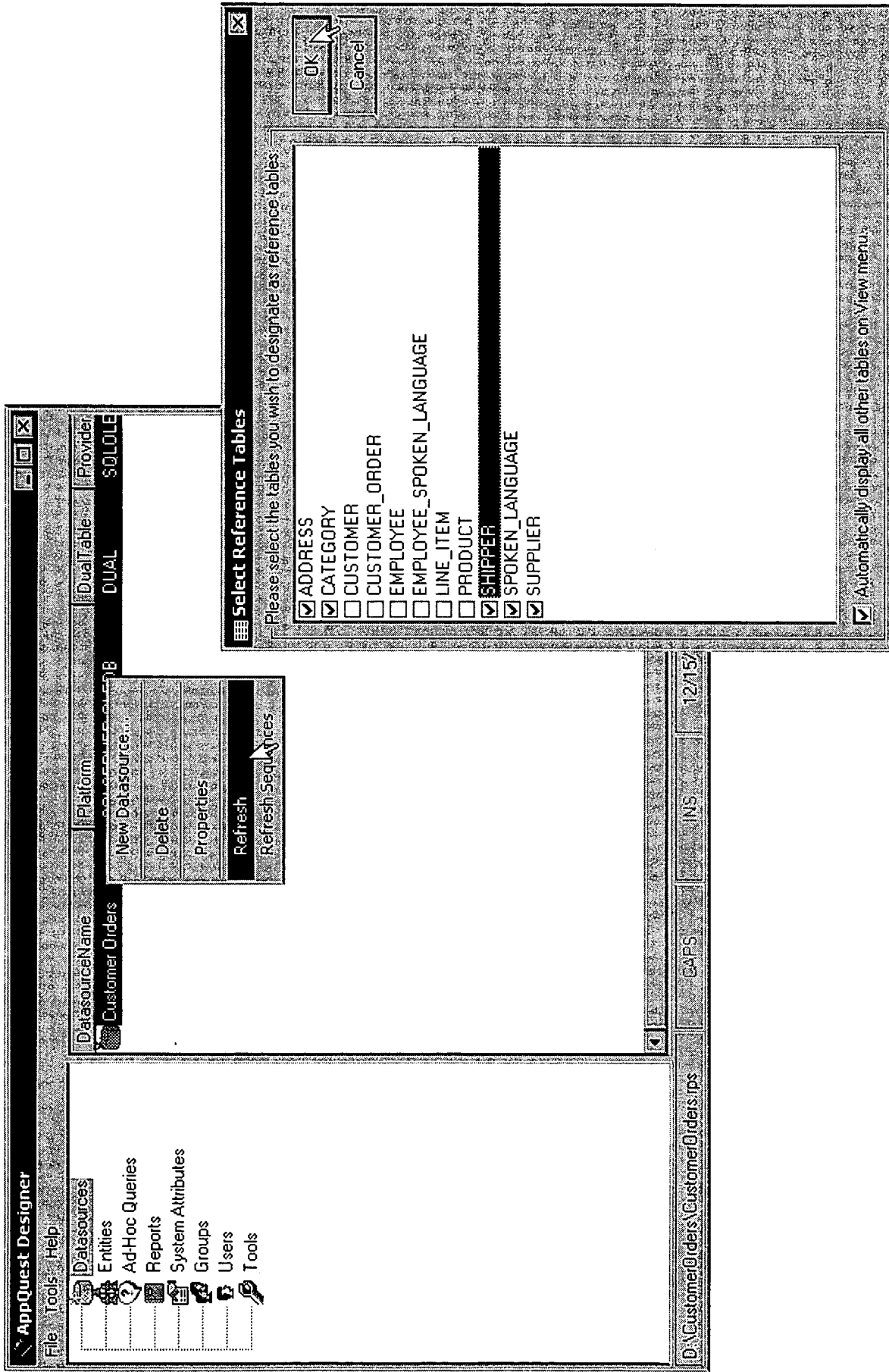


FIG. 60

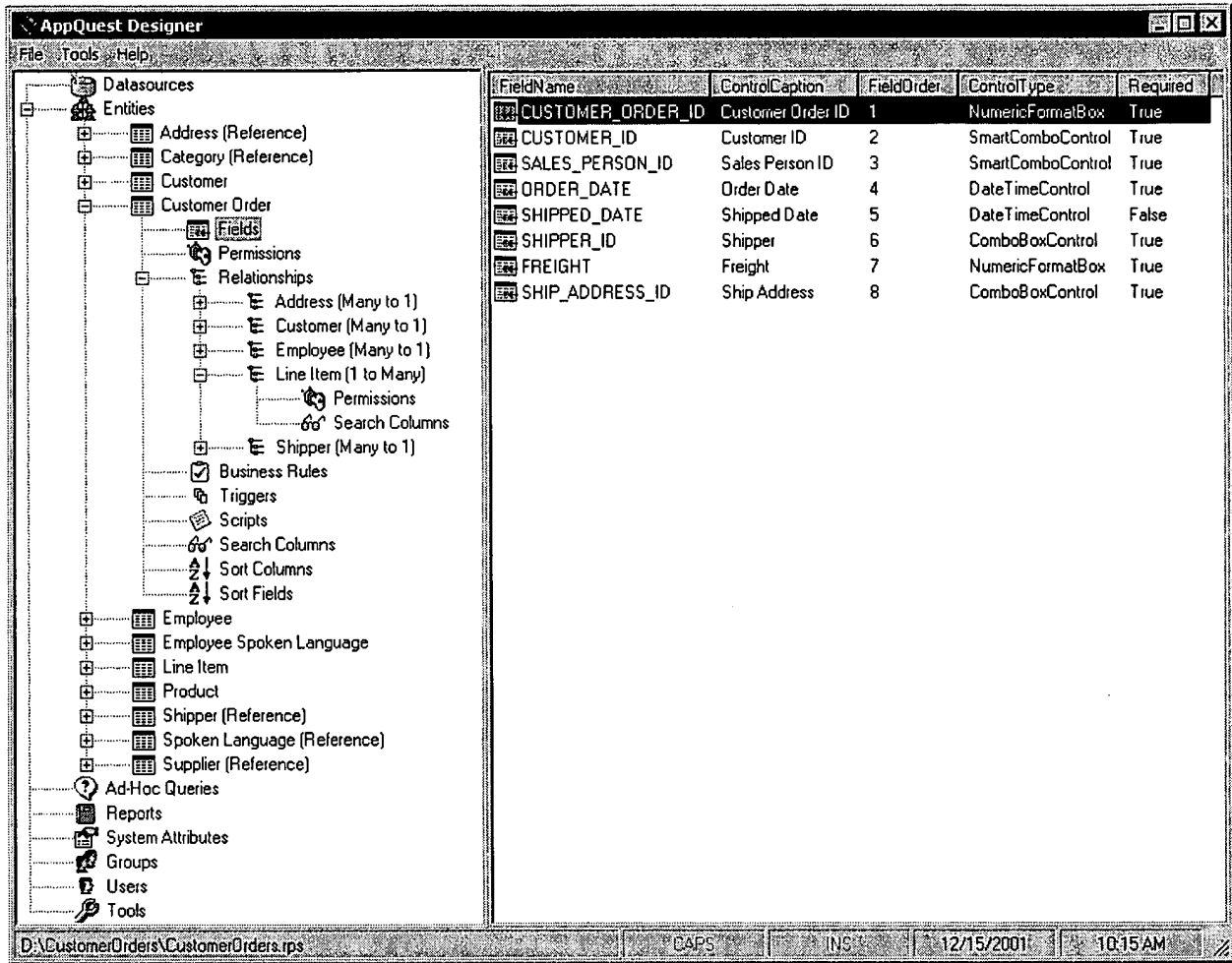


FIG. 61

Field Properties - Customer Order - CUSTOMER\_ID

General Attributes Scripts

Field Name: CUSTOMER\_ID

Control/Caption: Customer

Control Type: ComboBoxControl

Default Value:

Column Format:

Field Order: 2

☒ Required

☒ Visible

OK Cancel

Field Properties - Customer Order - CUSTOMER\_ID

General Attributes Scripts

Required attributes are checked:

Allow Edit: ☐

Display Column: 1

Expression: SELECT CUSTOMER\_ID, CustomerName  
FROM CUSTOMER\_V  
ORDER BY CustomerName

Expression Type: SQL

Limit To List: ☒

Reference Entity: Customer

OK Cancel

FIG. 62



Field Properties - Customer Order - SHIP\_ADDRESS\_ID

General Attributes Scripts

Field Name:	SHIP_ADDRESS_ID
Control Caption:	Ship Address
Control Type:	SmartComboControl
Default Value:	
Column Format:	
Field Order:	

SmartComboControl  
Date Time Control  
File Dialog Control  
Image BLOB  
Mask Edit Box  
Notes Control  
Numeric Format Box  
SmartComboControl  
Text Box Control  
Visible

OK Cancel

Field Properties - Customer Order - SHIP\_ADDRESS\_ID

General Attributes Scripts

Required attributes are checked

Display Only:	<input type="checkbox"/>
Expression:	ADDRESS_ID, Address, City, Region, PostalCode, Country
Expression Type:	EXPRESSION
Reference Entity:	Address (Reference)

OK Cancel

FIG. 63

Entity Properties - Customer Order

General

Attributes

Filters

Search Path

Links

Entity ID: 4

Entity Caption: Customer Order

DataSource: Customer Orders

Table Name: CUSTOMER\_ORDER

Table Alias: CUSTOMER\_ORDER

Primary Key: CUSTOMER\_ORDER\_ID

Recordsource: CUSTOMER\_ORDER.V

Icon: CustomerOrderico

Relative Order: 2

☐ Show Primary Key

☒ Display On View Menu

☐ Reference Table

☒ Visible

Entity Properties - Customer Order

General

Attributes

Filters

Search Path

Links

Allow Grouping: ☐

Audit On: ☐

Custom Data Entry: ☐

Custom Filter: ☒

Form Caption Expression: Order Number: ' + Convert(varchar(10), CUSTOMER\_ORDER\_ID)

List Limit: 1000

Minimum Width (Chars): 0

Report Name:

Report Path:

Report Type: ☐

Search On Key Press: ☐

Required attributes are checked.

OK

Cancel

FIG. 64

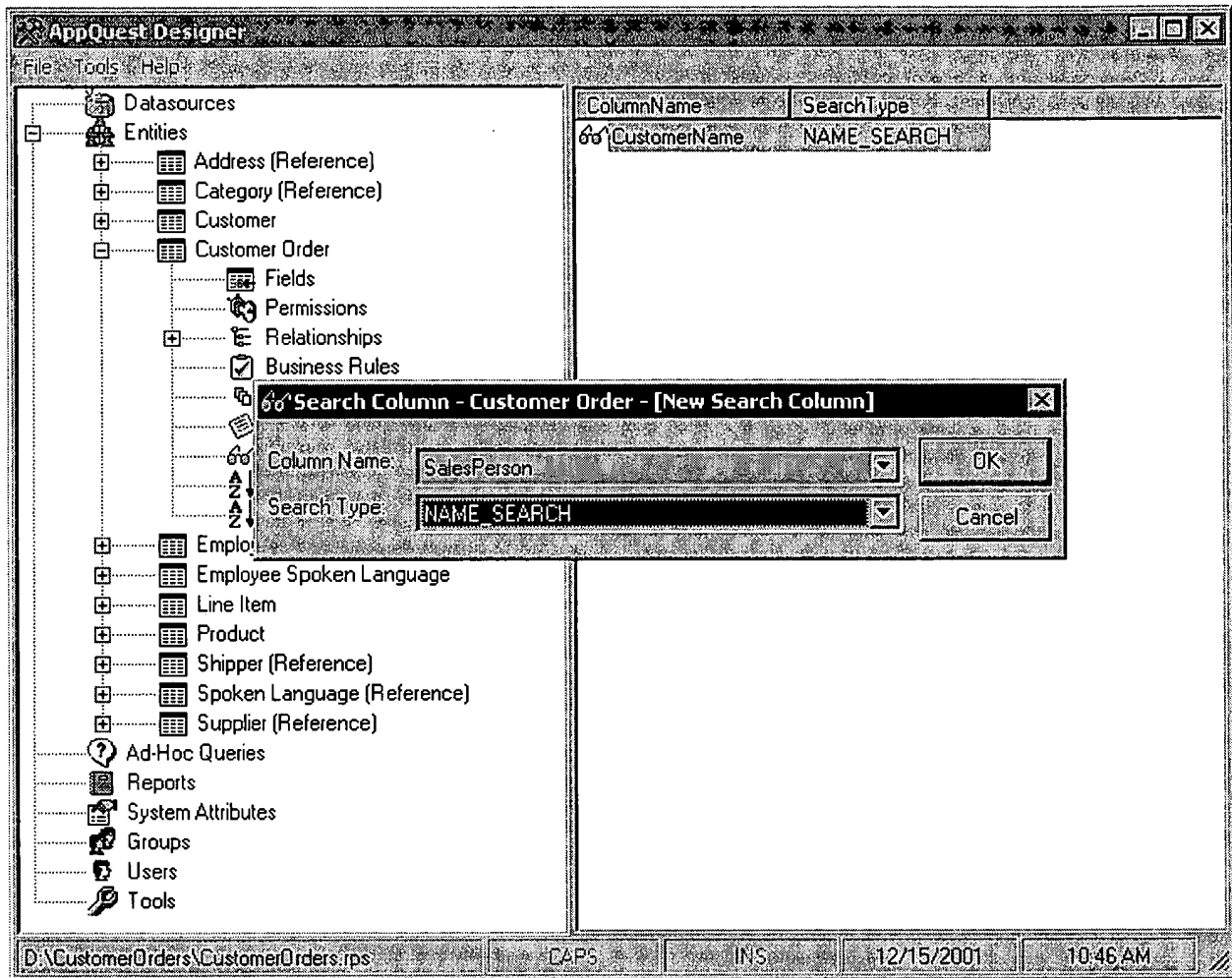


FIG. 65

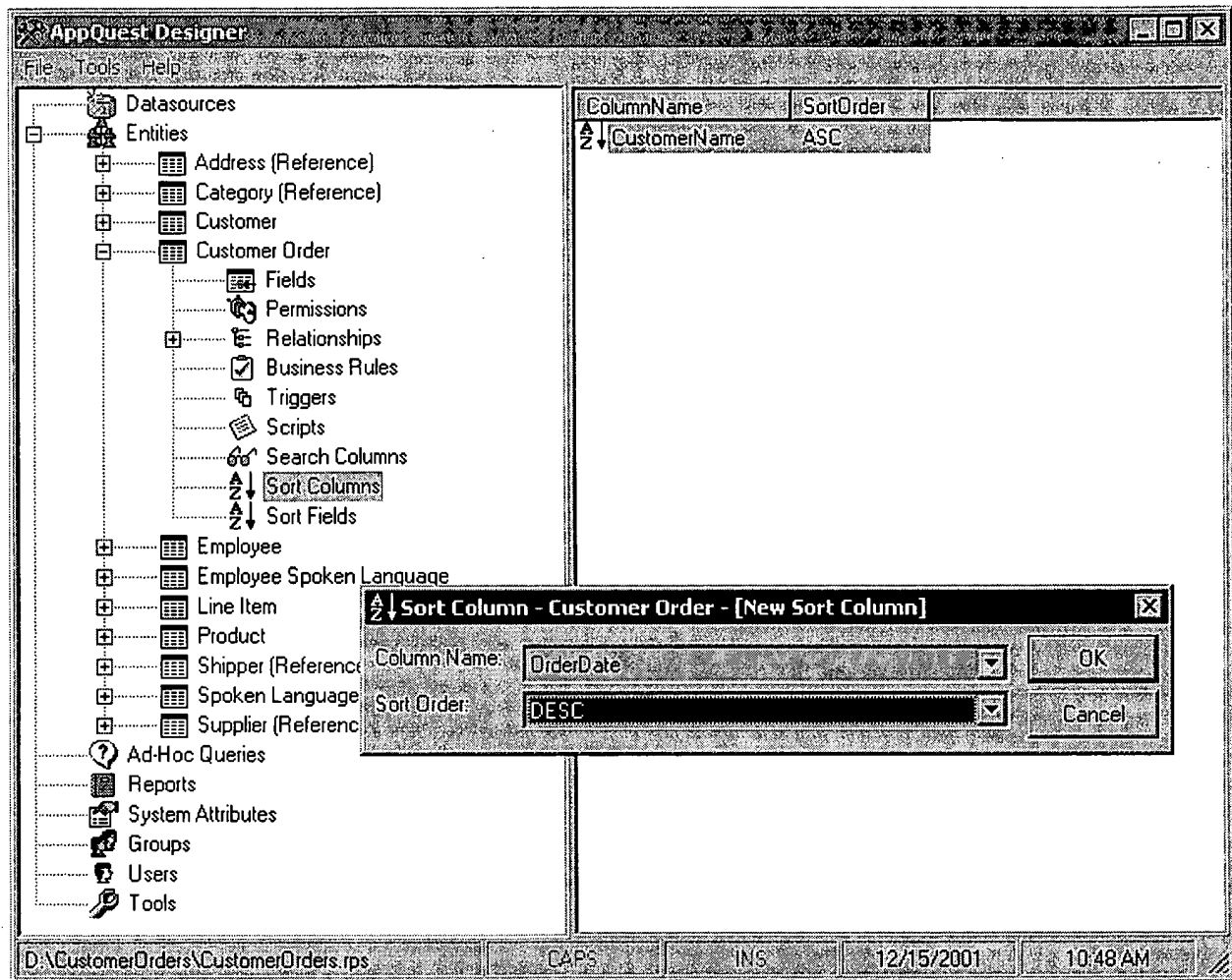


FIG. 66

10040851.12201

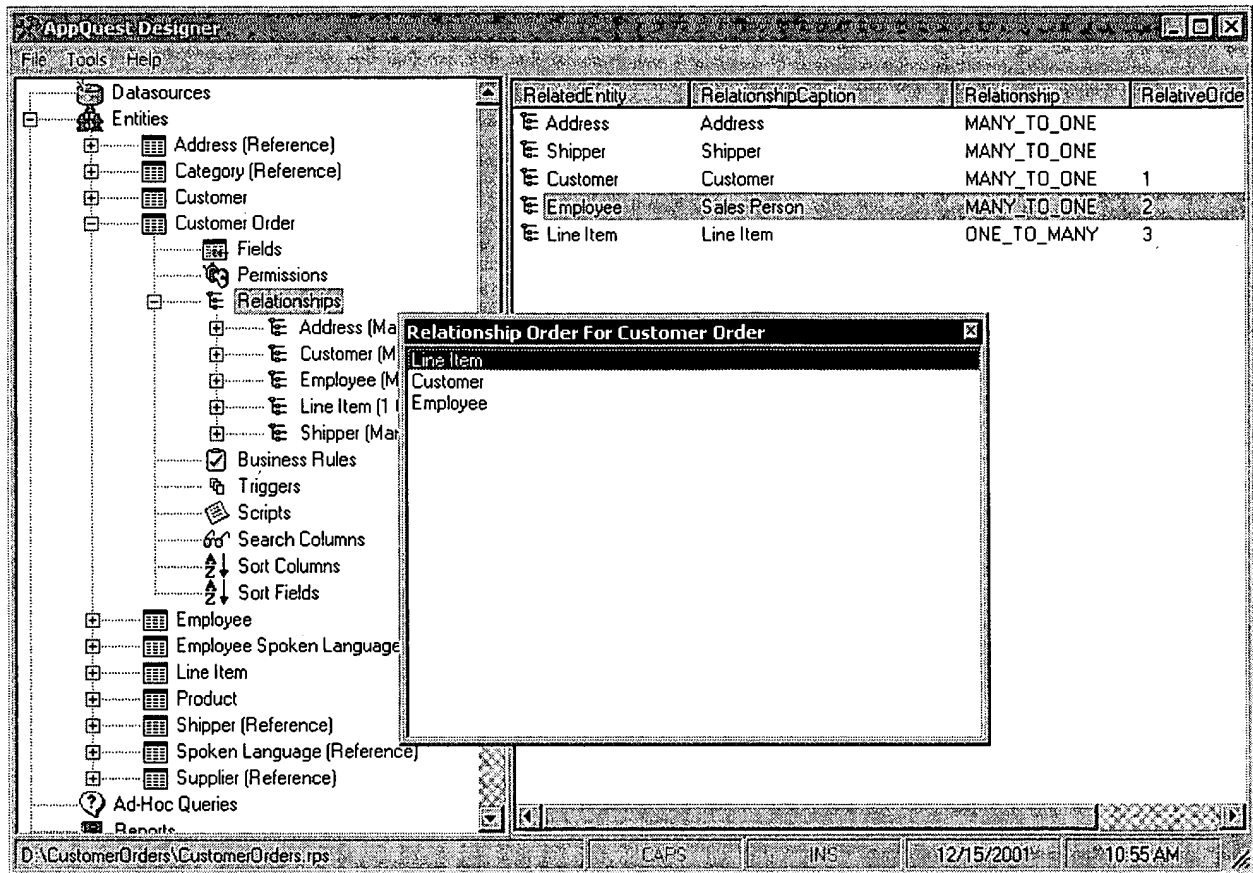


FIG. 67

**Relationship Properties - CUSTOMER\_ORDER.EMPLOYEE**

General | Attributes

Relationship Caption: Sales Person

Table Name: CUSTOMER\_ORDER

Field Name: SALES\_PERSON\_ID

Related Table Name: EMPLOYEE

Related Field Name: EMPLOYEE\_ID

Relationship Type: MANY\_TO\_ONE

Relative Order: 2

☐ Required

☐ Display On Tab

☒ Visible

OK Cancel

FIG. 68



10040851-122801

Group Permissions - Customer Order - [New Group Permissions]

Group Name: Sales Reps

List View Menu Data Entry Grid Menu

Menu Item
<input checked="" type="checkbox"/> &New @E Record
<input checked="" type="checkbox"/> D&uplicate @E Record(s)
<input checked="" type="checkbox"/> &Edit @E Record
<input checked="" type="checkbox"/> &Delete @E Record(s)
<input checked="" type="checkbox"/> .
<input checked="" type="checkbox"/> &View @E Record
<input checked="" type="checkbox"/> .
<input checked="" type="checkbox"/> E&xport @E Record(s)
<input checked="" type="checkbox"/> &Print Preview
<input type="checkbox"/> Print &Report
<input checked="" type="checkbox"/> .
<input checked="" type="checkbox"/> Find @E (&Advanced)
<input checked="" type="checkbox"/> &Find @E
<input type="checkbox"/> .
<input type="checkbox"/> Display Data Entry &Grid

OK Cancel

FIG. 69

10040851.122801

Relationship Properties - CUSTOMER\_ORDER.LINE\_ITEM

General | Attributes

Relationship Caption: Line Item

Table Name: CUSTOMER\_ORDER

Field Name: CUSTOMER\_ORDER\_ID

Related Table Name: LINE\_ITEM

Related Field Name: CUSTOMER\_ORDER\_ID

Relationship Type: ONE\_TO\_MANY

Relative Order: 1

☐ Required

☒ Display On Tab

☒ Visible

OK Cancel

FIG. 70

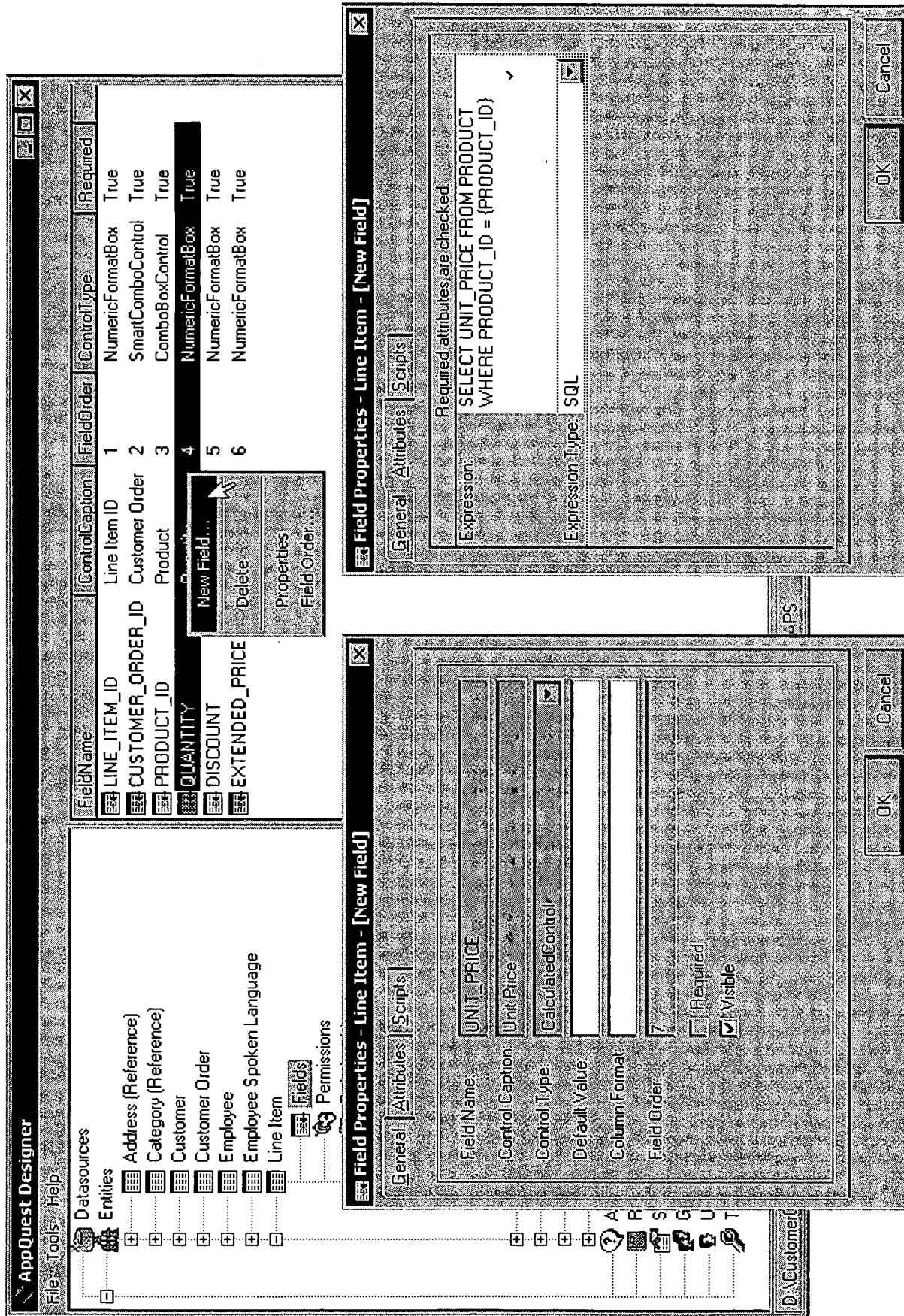


FIG. 71

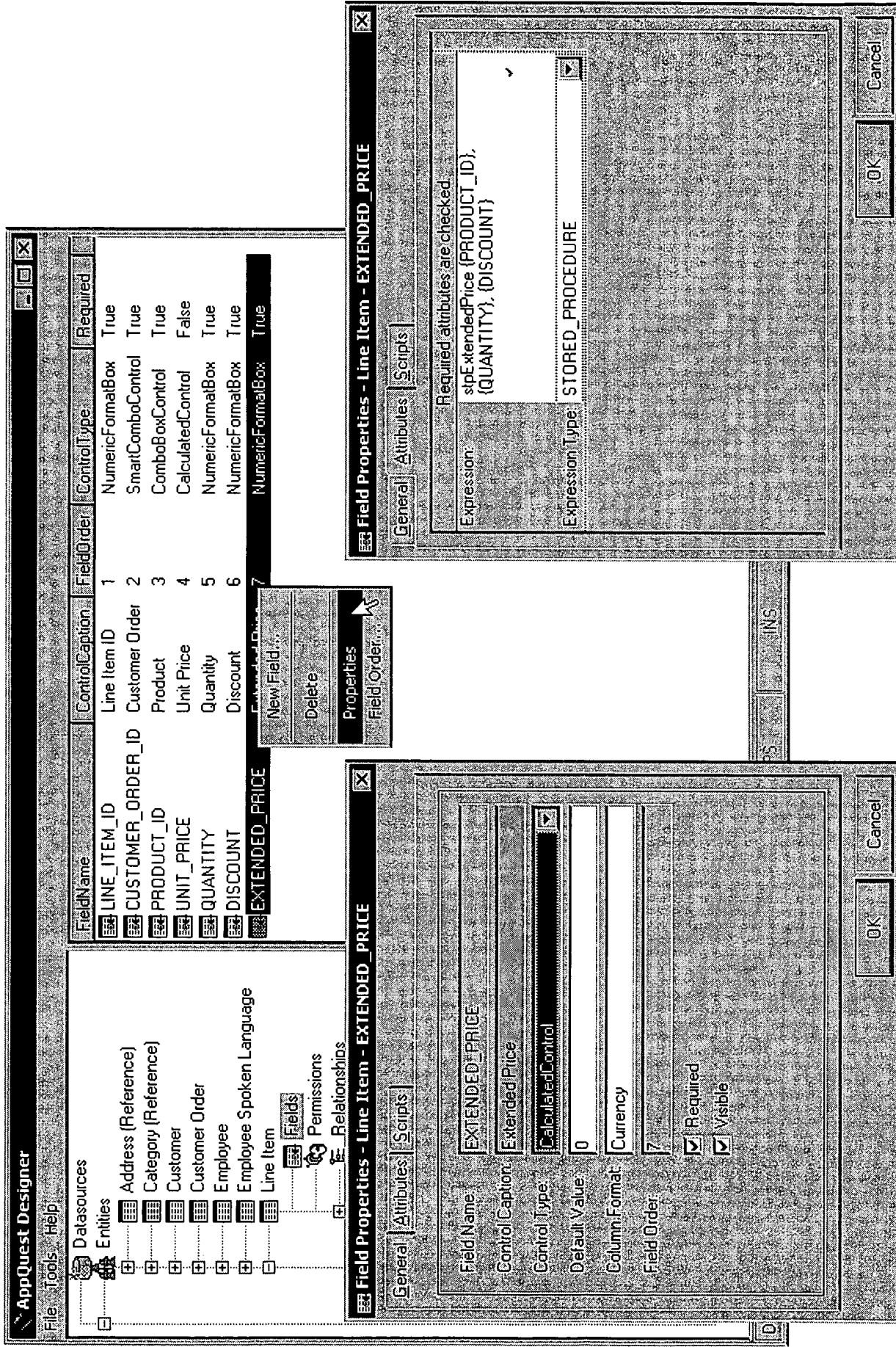


FIG. 72

10040851.122801

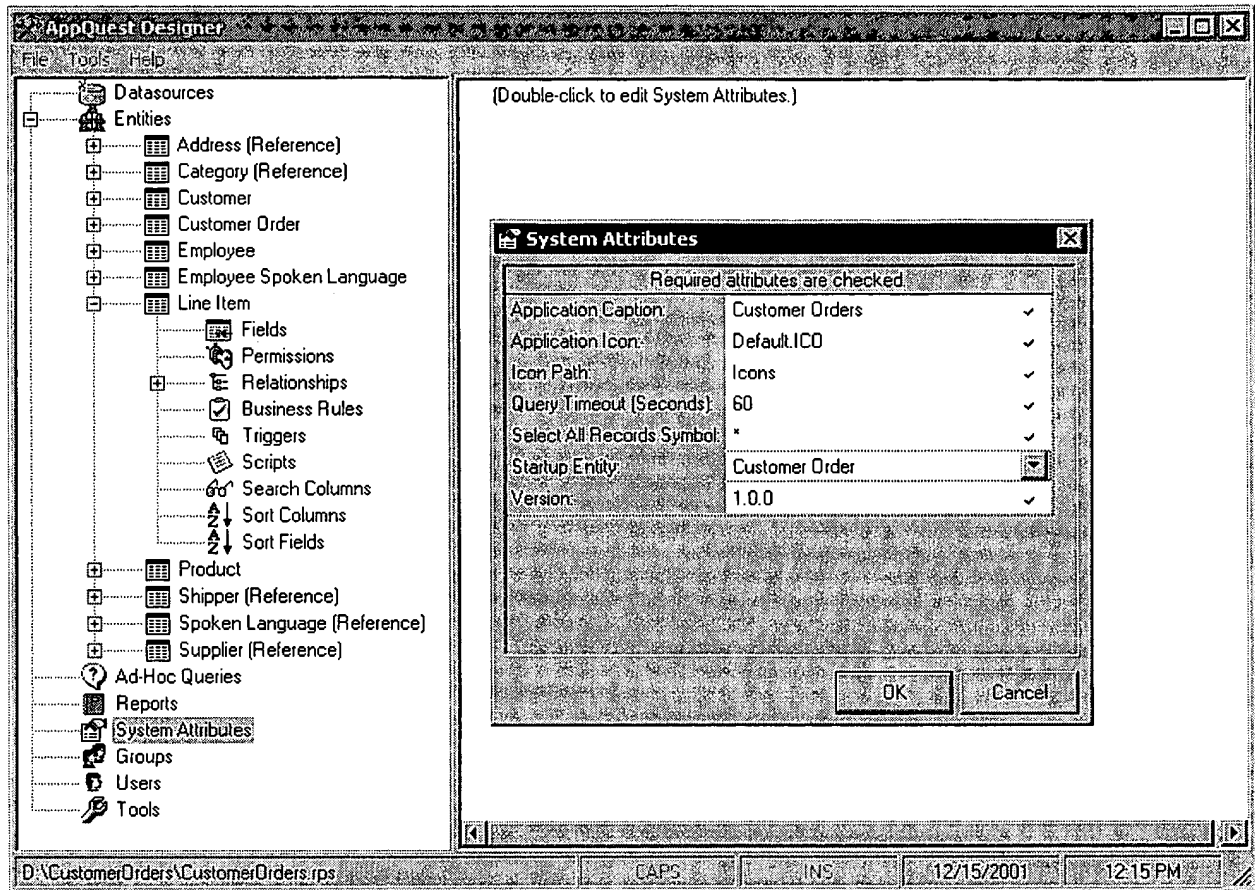


FIG. 73



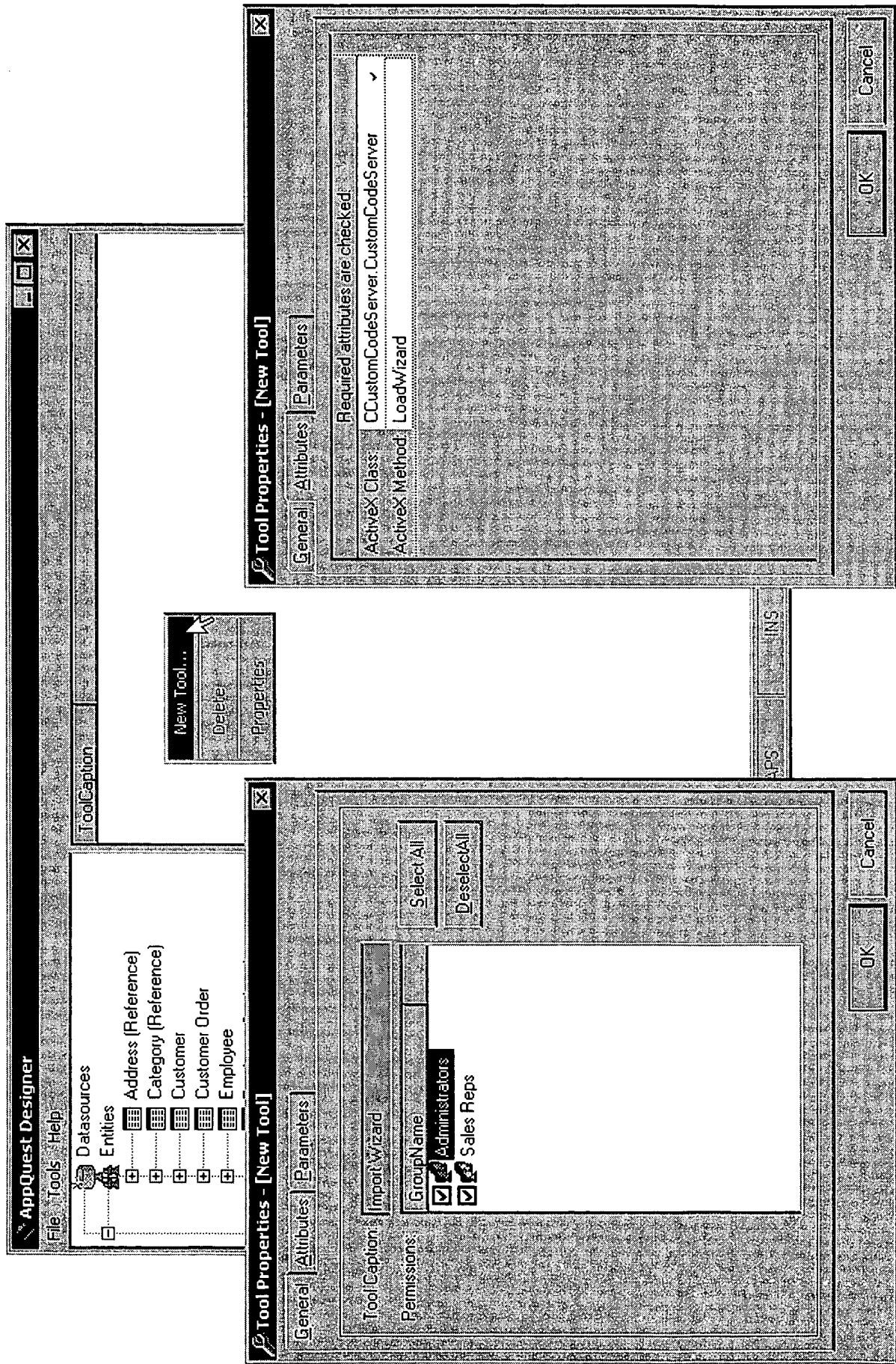


FIG. 74



10040851-122801

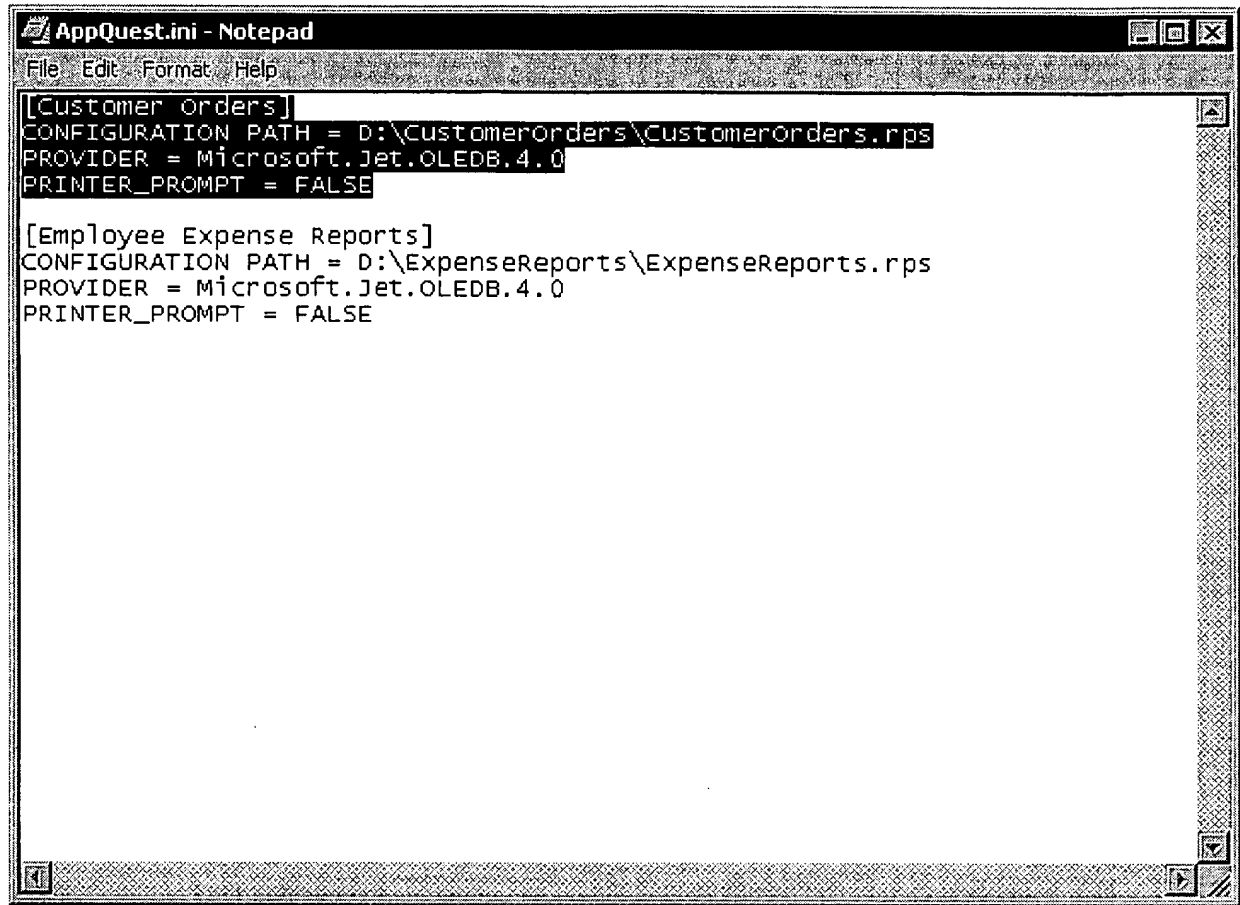


FIG. 75

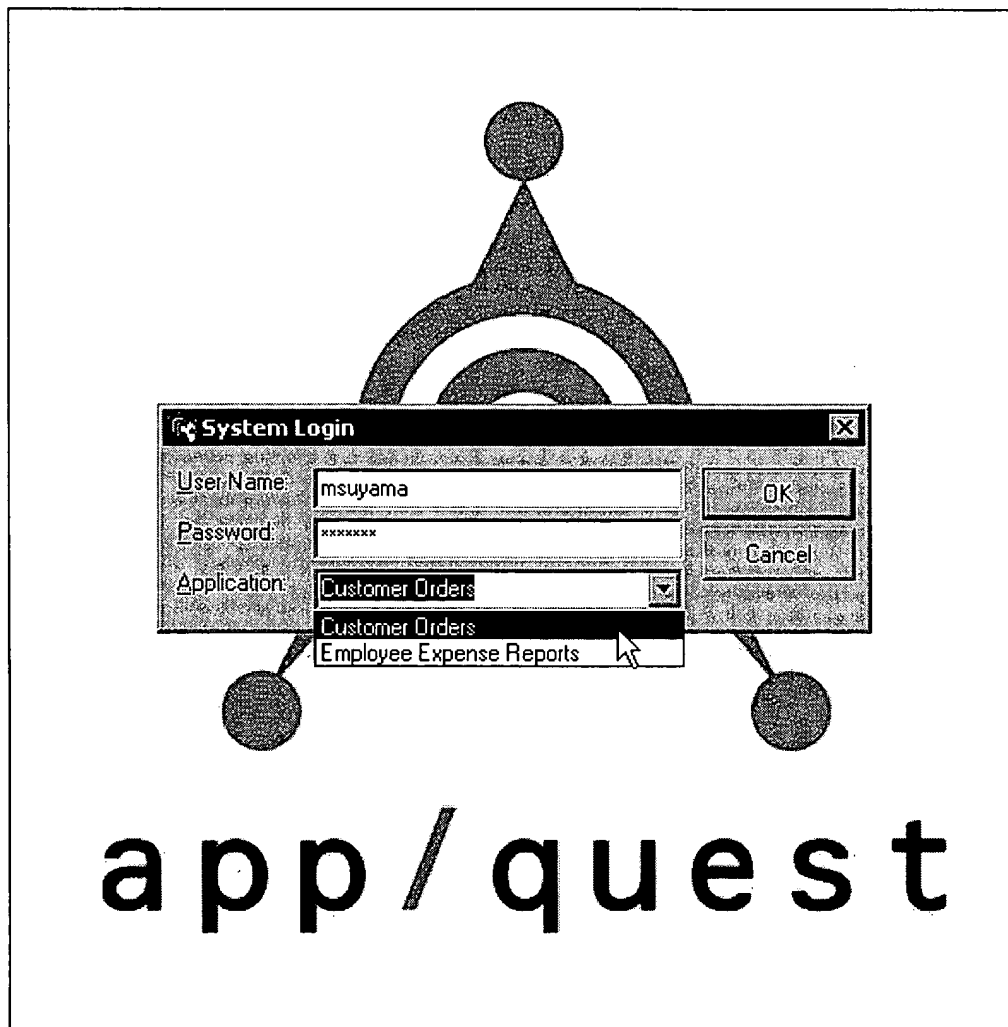


FIG. 76

Customer Orders

File Tools Window Help

Change Password...

Import Wizard...

er Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard "\*".

CustomerName	SalesPerson	OrderDate	ShippedDate	ShipperName	Freight	ShipAddress	ShipCity
Ottiles Käseladen	Fuller, Andrew	4/14/1998	4/16/1998	United Package	\$43.30	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Suyama, Michael	4/3/1998	4/10/1998	United Package	\$96.35	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Suyama, Michael	1/15/1998	1/23/1998	United Package	\$71.49	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Peacock, Margaret	12/5/1997	12/9/1997	Speedy Express	\$157.55	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Leverling, Janet	9/26/1997	9/30/1997	Speedy Express	\$145.63	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Peacock, Margaret	6/26/1997	7/1/1997	Federal Shipping	\$75.89	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Peacock, Margaret	5/30/1997	6/5/1997	Federal Shipping	\$120.97	Mehrheimerstr. 369	Köln
Ottiles Käseladen	Devolio, Nancy	4/16/1997	5/13/1997	United Package	\$4.99	Mehrheimerstr. 369	Köln

Record: 1 of 10

Line Item

Customer

Sales Person

CustomerName	OrderNumber	ProductName	UnitPrice	Quantity	Discount	ExtendedPrice
Ottiles Käseladen	11020	Ikura	\$31.00	24	0.15	\$632.40

Record: 1 of 1

Found: 10

FIG. 77

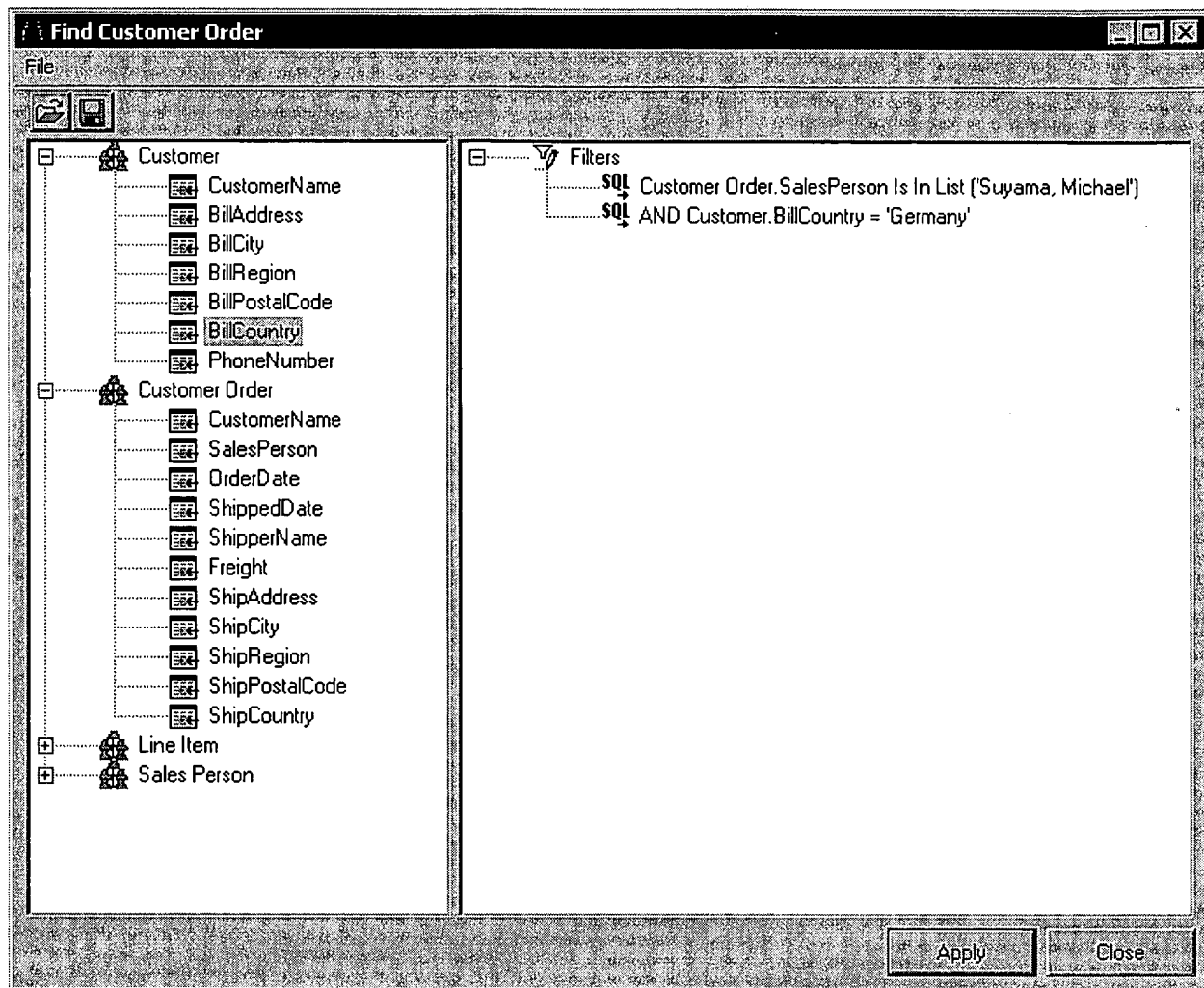


FIG. 78

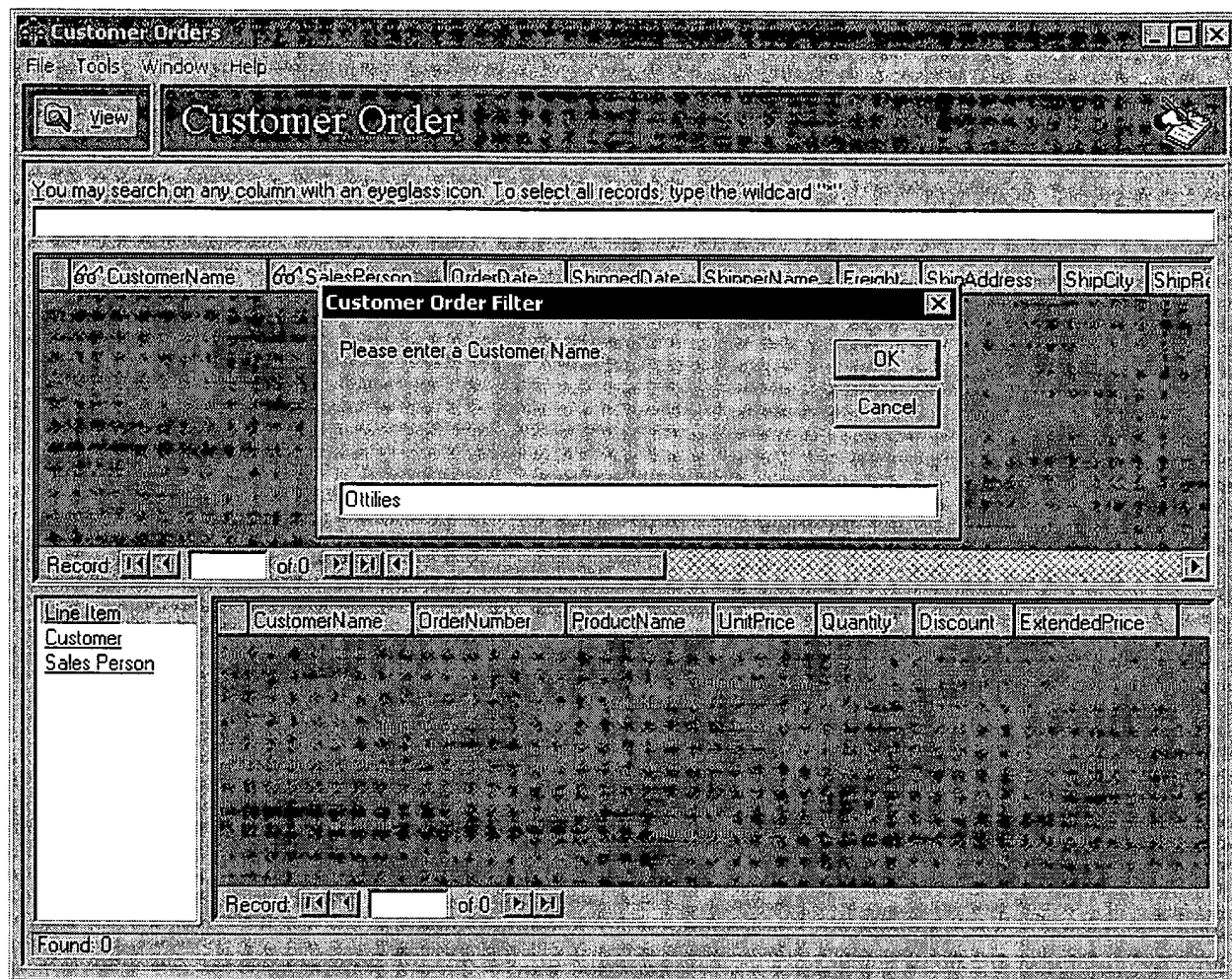


FIG. 79

Customer Order Input - [New Record]

File Edit View

General 1 Line Item Related Info

Required fields are checked:

Customer Order ID

New Record

Customer

ACME Grocery

Sales Person

Suyama, Michael

Order Date

12/15/2001

Shipped Date

Shipper

National Transport

Freight

\$33.75

Ship Address

OK

Cancel

Customer Order Input - [New Record]

File Edit View

General 1 Line Item Related Info

Required fields are checked:

Customer Order ID

New Record

Customer

ACME Grocery

Sales Person

Suyama, Michael

Order Date

12/15/2001

Shipped Date

Shipper

National Transport

Freight

\$33.75

Ship Address

OK

Cancel

Address

File

Enter your search criteria below. You may search on any field.

To select all records, type the wildcard \*

Albuquerque

Find

Clear

OK

Cancel

Address	City	Region	Postal Code	Country
2817 Milton Dr.	Albuquerque	NM	87110	USA
13015 Sandia Point NE	Albuquerque	NM	87111	Bernalillo
2810 Milton Dr.	Albuquerque	NM	87110	USA

record: 1 2 3

3 of 3

Find

End

OK

Cancel

FIG. 80



Customer Order Input - Order Number: 11078

File Edit View

General

Line Item

Related Info

CustomerName

OrderNumber

ProductName

UnitPrice

New Line Item Record

Duplicate Line Item Record(s)

Edit Line Item Record

Delete Line Item Record(s)

Link the Selected Line Item Record(s) with a Different Customer Order Record

Unlink the Selected Line Item Record(s) from the Customer Order Record

View Line Item Record

Export Line Item Record(s)

Print Preview

Filter Line Item Records

Promote Line Item

Display Data Entry Grid

Record

OK

Line Item Input - [New Record]

File Edit View

General

Related Info

Required fields are checked.

Line Item ID

Customer Order

Product

Unit Price

Quantity

Discount

Extended Price

New Record

CustomerName: ACME Grocery

OrderDate: 12/15/2001

SalesPerson: Suyama, Michael

OrderNumber: 11078

Boston Crab Meat

18.4

10

0.2

\$147.20

OK

Cancel

FIG. 81

Customer Orders

File Tools Window Help

View

Customer Order

You may search on any column with an eyeglass icon. To select all records, type the wildcard \*

acm

CustomerName	SalesPerson	OrderDate	ShippedDate
ACME Grocery	Suyama, Michael	12/15/2001	
ACME Grocery	Suyama, Michael	11/15/1996	11/20/1996

Record: 1 of 2

Line Item

Customer

Sales Person

New Sales Person Record

Duplicate Sales Person Record

Edit Sales Person Record

Delete Sales Person Record

Link the Customer Order Record with a Different Sales Person Record

Unlink the Customer Order Record from the Selected Sales Person Record

View Sales Person Record

Export Sales Person Record(s)

Print Preview

Promote Sales Person

Display Data Entry Grid

Employee

File

You may search on any column with an eyeglass icon. To select all records, type the wildcard \*

EmployeeName	SSN	DOB	HireDate	Manager	HomePhoneNum
Suyama, Michael	585-35-1292	7/2/1963	10/17/1993	Buchanan, Steven	(711) 555-7773

Record: 1 of 1

Customer Order

Spoken Language

CustomerName

OrderDate

ShippedDate

ACME Grocery

Suyama, Michael

12/15/2001

ACME Grocery

Suyama, Michael

11/15/1996

Alfreds Futterkiste

Suyama, Michael

8/25/1997

B's Beverages

Suyama, Michael

7/15/1997

Record: 1 of 68

Found: 1

FIG. 82

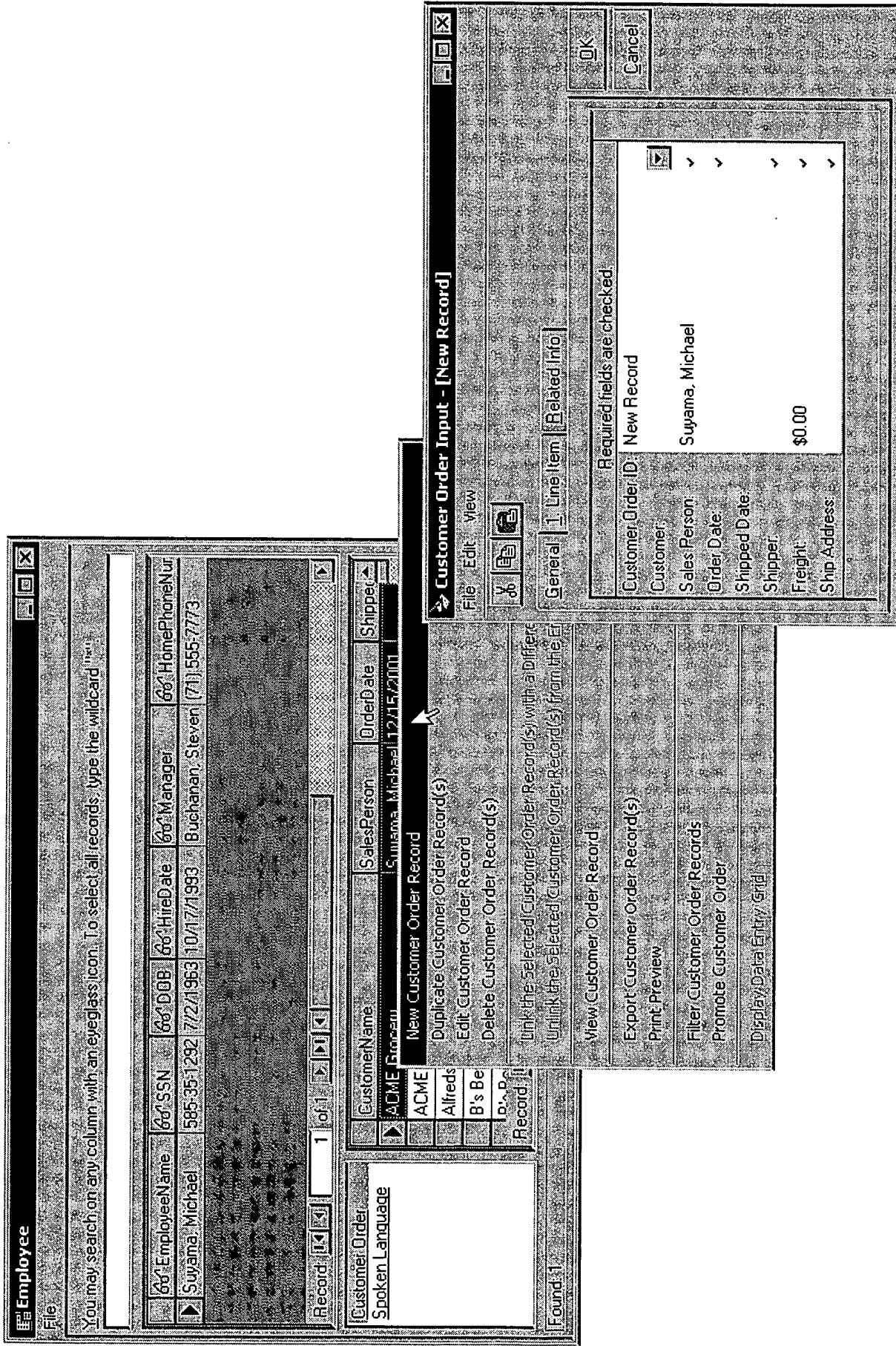


FIG. 83

10040851-12301

SQL Server Enterprise Manager - [2:Design Table 'CUSTOM...

Console Window Help

Column Name	Data Type	Length	Allow Nulls
CUSTOMER_ORDER_ID	int	4	
CUSTOMER_ID	int	4	
SALES_PERSON_ID	int	4	
ORDER_DATE	datetime	8	
REQUESTED_DATE	datetime	8	✓
SHIPPED_DATE	datetime	8	✓
SHIPPER_ID	int	4	
FREIGHT	money	8	
SHIP_ADDRESS_ID	int	4	

Columns

Description	
Default Value	
Precision	0
Scale	0
Identity	No
Identity Seed	
Identity Increment	
Is RowGuid	No
Formula	
Collation	

FIG. 84

FIG. 85

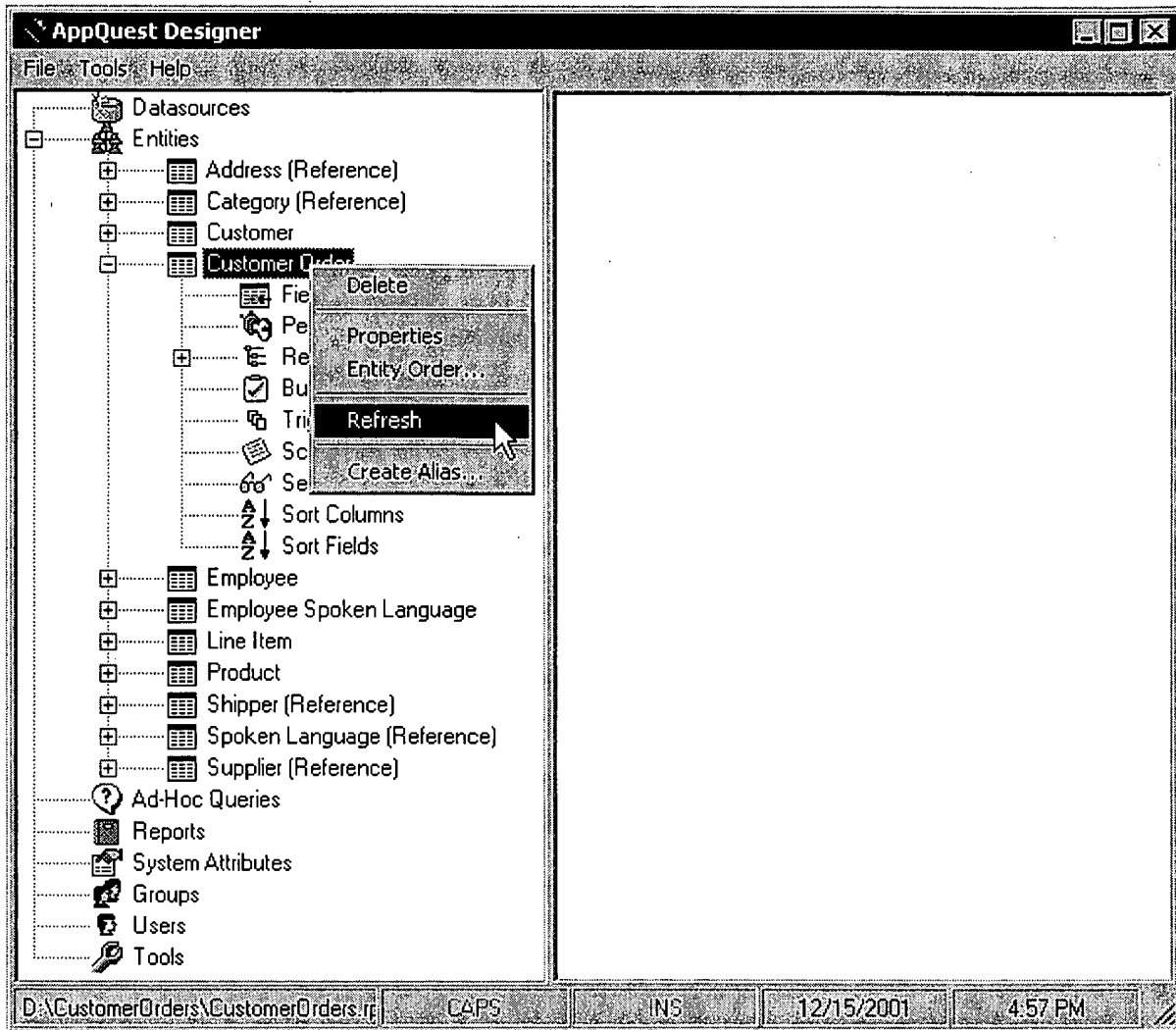


FIG. 85



10040851.122801

**Customer Order Input - Order Number: 11078**

File Edit View

General 1 Line Item Related Info

Required fields are checked:

Customer Order ID: 11078

Customer: ACME Grocery ✓

Sales Person: Suyama, Michael ✓

Order Date: 12/15/2001 ✓

Requested Date: [Dropdown]

Shipped Date: [Calendar]

Shipper: Nation

Freight: \$33.75

Ship Address: Address

City: Al

Region

Postal

Country

OK

Cancel

Today None

December 2001						
S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

FIG. 86